Vector Biology
and Control Project

Strengthening Vector-Borne Disease Control Training

A Global Strategy

A Report on the VBC Project's
Training Program Development Workshop
July 18-19, 1990
and
Vector-Borne Disease Control
Training Materials Review

by

Maurice J. Apted, MPH

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1901 North Fort Myer Drive • Suite 400 • Arlington, VA 22209 • (703) 527-6500 • Telefax: (703) 243-0013 • Telex: 248812 (MSCI UR)

Author

Maurice J. Apted, MPH, is program coordinator of the International Communication Enhancement Center, Tulane University School of Public Health and Tropical Medicine.

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Executive Summary

A training program development workshop was held July 18-19, 1990. Participants included representatives from all three VBC Project subcontractors, A.I.D., the Centers for Disease Control and VBC. The workshop was lead by Maurice J. Apted, assisted by Andrew Gordon.

The workshop was held as part of the process of formulating a proactive VBC Project training strategy in keeping with the Project themes of sustainability, institution-strengthening and enhanced community participation for VBC-supported activities.

Workshop participants became more aware of the strengths and obstacles that may affect VBC training activities; proposed specific Year Two training agenda priorities; and outlined possible training priorities for years three through five.

General training issues that should receive priority were identified, including management training, training of trainers (TOT), university involvement in operational-level training and organizational weaknesses in VBD programs. The Year Two training agenda should give priority to developing training modules, assessing training needs, and strengthening U.S.-developing country institutional ties. Recommended priorities for training modules included management development, community involvement in VBD control, epidemiology/ surveillance and case management, entomology/parasitology, health education/communication and cost/benefit analysis. Four possible module development strategies were devised.

The author's recommendations for the VBC Project include 1) adopting a systematic approach to developing a training program; 2) emphasizing competency-based training; 3) strengthening the needs assessment capabilities of local VBD control organizations; 4) emphasizing adequately designed training-of-trainers activities; 5) taking a leadership role in training module/material development and 6) strengthening the role of university-based training.

In an activity related to the workshop, the author also reviewed approximately 150 training materials. Recommendations are made

about how future reviews should be conducted, the VBC Project role in materials development and the creation of a VBC Project computerized training materials database.

1. Introduction

The workshop was held to formulate an overall VBC training agenda and to generate specific training activity recommendations for the Project Year two work plan for the VBC Technical Assistance Committee (TAC) to consider.

The workshop had the following objectives:

- To examine issues, including strengths and obstacles, that may affect subcontractor participation in VBC training activities.
- To identify specific training activities to consider in developing the Year Two workplan.
- To develop suggestions and recommendations concerning the VBC training strategy and agenda for Project years three through five.

The workshop was expected to achieve the following:

- a proposed agenda for training in Year two;
- a list of possible training agenda and strategy priorities for Project years three through five;
- increased understanding of the strengths and potential obstacles affecting VBC training activities; and
- increased awareness among project subcontractors of the role of training in achieving VBC Project objectives related to institutional strengthening, sustainability and enhanced community participation.

2. Accomplishments

General accomplishments

1. Three VBC Project subcontractors and selected vector biology and control specialists participated in a two-day workshop.

2. Through extensive discussion, participants arrived at a shared understanding of the constraints and challenges in providing training that addresses sustainability, institutional-strengthening and enhanced community involvement.

3. Participants made recommendations for the VBC training strategy and agenda.

4. Participants gained greater awareness of the role of training in institution-strengthening, sustainability and enhanced community participation.

Specific Accomplishments - Priority Issues

1. Management training

Management training for the effective delivery of vector borne disease prevention and control services is a top priority for planners, program directors, service-delivery managers and district and health center supervisors. Effective training in this arena will improve sustainability, strengthen institutions and encourage the development of community-based control and prevention programs.

2. Training of Trainers

To establish and strengthen national and regional training capacity to train at the technical, management and service-delivery levels is a priority.

Activities to train trainers should include the development of skills to assess training needs, a training program, curriculum development and training evaluation. Adequate technical competency in vector biology and control specializations also needs to be developed.

Because the continuing education needs for VBD personnel are extensive, due largely to the changing nature of the vectors, additional training technologies such as distance-learning will probably have some role to play in VBD training.

3. Strengthening university operational training

To strengthen vector-borne disease control and prevention at the service-delivery level, it is important to build linkages between the universities involved in VBD research and training and the schools that train public and primary health care personnel.

4. General weaknesses in VBD control organizations

Many vertical VBD programs find it difficult to integrate into existing primary health care (PHC) services. How can training assist in the integration process?

As a rule, career paths for VBD control personnel are inadequate. How can these be expanded as part of the integration process?

3. Specific Agenda Issues for the Next Four Years

Training needs assessment

1. Develop, field-test and refine a training needs assessment (TNA) instrument.

2. Institutionalize the TNA process.

3. Incorporate the TNA into the VBC training technical assistance package, enabling country nationals to conduct local assessments.

Development of priority training modules

1. Develop a training module matrix incorporating TNA information with the three general levels of training audience and three levels of VBD program sophistication.

2. Review and critique training materials; identify gaps for further development; create a database of current materials and promote its availability.

Institutional Ties

1. Identify national and regional training entities with the potential to establish partnerships for collaborative development of training and other VBD control activities.

2. Formalize partnerships with specific goals, short- and medium-term objectives, and specific collaborative activities.

3. Involve the developing country partnership organizations in developing training modules by helping them with module adaptation, pretesting, refinement and training implementation.

4. Specific Agenda Items for Year Two

Training materials development

1. Complete training modules matrix.

2. Begin development of selected priority training modules and complete trial versions during Year Two.

3. Inventory and review existing training materials for VBD control with an emphasis on malaria and dengue.

Training needs assessment

1. Establish a standardized process to assess training needs for use by consultants and USAID missions.

Institutional strengthening through linkages

1. Inventory national and regional VBD training/research centers.

2. Explore institutional linkages between the U.S. and LDC institutions involved in training and research for VBD control (continue during subsequent years).

3. If one or more institutions can be selected, begin collaboration with adaption and field-testing of trial versions of training modules.

5. Training Module Development Options

Four overall approaches to developing training modules are proposed. A common TOT module will preface each technical, management or service-delivery training module.

Training audience

Three broad categories of training audiences are proposed: technical, administrative/management and paraprofessional (PHC/service delivery/community levels).

Country targets

A modified USAID definition was adopted to define three levels of VBD program sophistication as emergent, growing and mature.

Possible priority subject modules

- Strategy development and planning for VBD control
- Information systems development and evaluation
- Community involvement
- Epidemiology/surveillance/case management
- Entomology/parasitology/vector surveillance
- Personnel management
- Health education
- Cost/benefit analysis

Training module development options

The four options below describe how training module development may be allocated among VBC project subcontractors.

A TOT module will be provided as an introductory chapter for all modules selected for development. The TOT will cover training methods, curriculum development and training evaluation skills.

The key to the charts below are as follows:

a. Country states of development

I - emergent
II - growing
III- mature

b. Service level

Technical (Tech)
Administration/Management (Admin/Mgmt)
Paraprofessional (Para)

c. Possible module subject matter

VBD control strategy development/planning
MIS/evaluation
Community participation
Epidemiology/surveillance/case management
Entomology/parasitology/vector surveillance
Personnel management/supervision
Health education
Cost/benefit analysis

d. Subcontractors

Ha - Harvard
Tu - Tulane
JA - Uniformed services

Option A/B

Service level	Country levels		
	I	II	III
Tech	Ha	Tu	Ja
Admin/Mgmt	Ha	Tu	Ja
Para	Ha	Tu	Ja

Option A (Country level specific)

Each subcontractor (Ha, Tu, Ja) selects a topic from the list above and develops a module for each service level (Tech/ Admin/Para) in only one of the three country levels (I or II or III).

Option B (Subject matter and country specific, e.g., Comprehensive Malaria Control)

Each subcontractor develops modules for each service level in one of the three country levels.

Option C

Service level	Country levels		
	I	II	III
Tech	Ja	Ja	Ja
Admin/Mgmnt	Ha	Ha	Ha
Para	Tu	Tu	Tu

Option C (Service-level specific all country levels)

Each subcontractor selects a topic from the priority list above, selects only one service level (Tech, Admin or Para), and develops modules for each of the country levels (emergent, growing, mature).

Option D

Service level	**Country levels**		
	I	II	III
Tech			
(Entomology/Parasitology)	Ja	Ja	Ja
Admin/Mgmnt (Epidemiology/Surveillance)	Ha	Ha	Ha
Para	Tu	Tu	Tu

Option D (TOT specific/subject-service specific/all country levels)

The module would be a TOT module for a specific subject for a single service level for each country level.

Variation - Option D Subject matter specific/all service levels/all country levels.

Example: Subject - Community development

Modules
- Mobilizing community to reduce dengue
- Health center role in community mobilization
- Planning districtwide community mobilization
- Developing national strategies for community mobilization for dengue control

Each service level and all country levels will be targeted.

6. Discussion Papers

Four papers were provided during the workshop to stimulate discussion and help in formulating recommendations. These papers are in the appendices. A summary of each follows.

VBC Project Training Strategy Issues - Apted

This paper details training issues that address the project objectives of sustainability, institutional strengthening and enhanced community participation. It emphasizes the need for VBC training assistance to derive from systematic training needs and organizational capabilities assessments; recommends a process for creating and strengthening local training of trainers; and stresses defining appropriate and effective VBD strategies for health workers as part of training at the primary health care level.

Regional and National VBC Training in Africa - Kolo

The author of this paper describes some significant constraints to the implementation of regional VBD training projects, including the complexities of national African differences; the problems of coordination between existing regional francophone and anglophone VBD entities; and the lack of a strong working relationship between university training/research activities and ministry of health operations.

Training for VBD Control: Notes and Comments - Warren

This paper describes some of the lessons learned from the ICMRT and ICMR activities. It stresses the need for technical specialists to receive training as trainers if they are to build effective VBD institutions. Management-level training is emphasized, as is the need to build interinstitutional relationships

that actually strengthen local VBD activities in addition to providing extended research opportunities. Also stressed is the need for local-level training that enables local health officials to participate and develop strategies to involve the community in VBD control.

VBC Training Issues: Preliminary Position Paper - Brinkman

The author of this paper stresses the likelihood that vertical VBD programs will disappear in the future. Community-based VBD control will entail a significant refocusing of efforts and will require innovative VBD training strategies to meet the training needs of community and non-health professionals (e.g., media professionals). Emphasis also is placed on management and technical specialist training to help them support the PHC level more effectively. Local training specialists must be developed.

7. Recommendations

Training Process

The VBC Project should adopt a standard five-step process for developing local competency-based training programs:

1. Training needs assessment/situation analysis
2. Objective setting and planning
3. Training design
4. Training implementation
5. Training evaluation

This systematic approach makes it easier to institutionalize training program development at the country level by providing a simple model to guide local training activities. It is conceptually similar to common approaches to other technical assistance interventions in areas such as management development, operations research, community development and institution-building.

This approach also indicates clear milestones in training development. Each milestone yields a specific, tangible product. For example, step 1 produces a list of training needs and step 2 a set of objectives based on identified needs. Each product has intrinsic value, but also provides pertinent information for the next step in the process. Having a product at the end of each stage provides a stimulus to proceed to the next stage. It also can provide local control organizations with specific activities for which to seek external support.

Training needs assessment/situation analysis

As a first step, the VBC Project should initiate a set of needs

assessment/analysis activities in priority countries. The activities should offer local VBD control personnel opportunities to learn training needs assessment/analysis skills. Development of competencies in this area is valuable at all three country stages. Analysis and needs assessment focuses attention on both the range of training needs that may be required to strengthen a VBD control organization and the operational status of VBD management, service delivery and support services. The information obtained from this step of the process can give local VBD managers a comprehensive view of needs and circumstances that they, together with VBC Project technical assistants, can use to formulate a training or general VBD program development plan. By enabling local VBD control personnel to gather information about needs systematically and to use that information to formulate a VBD training or development plan, the VBC Project addresses sustainability and institutional strengthening.

Training of trainers (TOT)

Training of trainers is an excellent strategy to strengthen institutional capacity to conduct locally relevant training. It should be emphasized in the overall VBC training strategy. TOT can be provided at different levels of sophistication.

At a basic level, it is possible to provide TOT as an "add-on" to training that deals with specific technical competencies. This is an appropriate response for situations with limited services and restricted capacity to absorb assistance. This level of TOT would provide trainers with only basic skills to replicate the technical training they received. Higher order TOT skills such as curriculum development would not usually be an objective for an add-on TOT.

A higher level TOT would be appropriate for programs that are more sophisticated and that can absorb more outside technical assistance. The higher level TOT would develop multipurpose VBD training teams with members drawn from various VBD fields that could generate training workshops from scratch. These teams would acquire greater competencies in all areas of training program development, including increased skills in training needs assessment, curriculum development and materials design, evaluation and training of trainers.

It must be realized, though, that the development of competent local trainers requires significant support. For example, adequate workshop time must be provided in the initial TOT activity if skills building, as distinct from knowledge acquisition, is to occur.

Also, local training teams will often require technical assistance in the form of a consultant supervising trainer when they are conducting their first training workshop. Local trainers must master many aspects of training, including technical information and appropriate learning methodology such as participatory competency-based training. It is a training axiom that one way to master a subject is to use and teach it. Mastery is enhanced when it can be accomplished in a setting in which a supervising trainer is available to offer immediate guidance and feedback. Therefore, provision should be made in any future plan to enable local trainers to practice their newly acquired competencies as quickly as possible in time to the initial TOT activity.

A training-of-trainers assistance plan should provide, significant initial technical assistance to consolidate newly acquired trainer skills.

Curriculum development and training materials

Curriculum development skills provide trainers with the capacity to generate training materials and designs in response to local circumstances.

Given the inherently changing nature of VBD control, local trainers must have appropriate curriculum and training materials development skills. These skills are required to implement the third step in the basic 5-step process to develop a training program.

One relatively speedy method of developing this competency is to include curriculum design in the initial TOT process. As a first step, local designated trainers can adapt centrally produced generic curricula as a part of their TOT training. Additional technical assistance can be provided when different curricula are required to meet a specific local situation.

There are distinct advantages to having local trainers conduct their own curriculum development (with appropriate assistance); these are in keeping with VBC Project themes of sustainability and institution strengthening. For example, local curriculum development can bestow a sense of ownership and commitment and can strengthen training professionalism.

Local curriculum development capacity can enable local VBD control services to respond more quickly to changing conditions. This is especially important as programs became more integrated. The greater the capacity to respond to changing local conditions, the better the sustainability of local VBD control programs.

VBC's role in curriculum development

VBC has a role to play in the direct development of generic training curricula and materials. A preliminary survey of training materials I carried out finds that while there is material available that can be used as training resource material, (e.g., slides, texts, manuals, WHO technical reports), few ready-made curricula (modules) are available in the areas identified during the workshop as priorities, including control strategy development, MIS, and community involvement. There is ample resource material in selected technical areas, such as entomology, from which trainers can select the material to compile into training modules. A training module that fosters training sustainability and institutional strengthening, however, must also have adequate training instructions in the form of session plans, training designs or notes to trainers.

To reach this level of completeness in the training modules, VBC should give priority to creating module development teams of technical and training specialists with the most appropriate training methodologies. The completed modules should be tested in a developing country and modified accordingly so that the generic module can be efficiently adapted when required for another setting. Another possible approach is to produce prototype modules clearly designed as such and to provide such modules to countries with assistance for adaptation.

University-based training

University-based training has an appropriate role in developing local competencies at the scientific, research and medical level. It is not clear at this time what role U.S.-based university academic training can play in directly strengthening the service=delivery levels. This question requires further exploration. Workshop-type courses for training at specialist levels in the United States may provide training opportunities that are not available or not cost-effective if conducted in the country(ies) of need.

U.S. university-sponsored training at regional centers is also another training mode worth exploring at the scientific, research and medical levels. It is important to see this type of training not as an end in itself. Consideration must be given to how the trained person can apply training and function effectively upon returning to his or her home country. Close contact between the VBC Project and sponsoring agencies such as A.I.D. in the planning stages of the regional training and in the follow-up of the returning trainee can help the person apply his or her newly acquired competence.

In this way, the VBC Project will address the issue of sustainability (does the trained person have the organizational support to sustain activity?) and address the issue of institution-strengthening (what does the VBD control organization need for the trained person to work effectively after training?)

There also is a clear role also exists for U.S. universities in the development and strengthening of developing country universities and VBD research institutions through assistance plans that strengthen staff and faculty in the scientific, research and medical aspects of VBD control. These institutions also may be the target for long-term strategies that lead to the establishment of management training capacity for VBD control.

8. Training Materials Review Introduction

Approximately 150 items were obtained, and a preliminary review of selected training materials was completed. Material was selected if it met one or more of the following criteria:

- o Described a vector-borne disease condition
- o Involved the parasitology of vector-borne diseases
- o Involved the entomology of vectors for malaria and dengue
- o Described primary health care approaches to vector-borne disease control
- o Described laboratory procedures
- o Described community-based vector-borne disease prevention and control
- o Modeled training module composition
- o Described training of trainers

Recommendations

1. This review revealed a vast array of untapped training materials of potential value to VBD project training. Untapped sources include materials developing country institutions have created in the course of programs. Significant potential training materials are also available from several sources in the United States, including military research institutions (entomology keys for mosquito identification), the Centers for Disease Control (CDC), and institutions such as the Smithsonian (specimens, audiovisual aids).

   Because of the vast quantity of potential training materials, and the limited time and resources available, it is recommended that in the immediate future, additional searches and training material reviews be guided specifically by the needs of the training modules identified and given priority during the VBC Training Program Development Workshop.

2. The VBC Project should establish a computerized database of training materials. The recommended computer program for this purpose is PRO-CITE, a bibliographic database program. The database will give the VBC Project the capacity to store and access VBD training materials information efficiently. PRO-CITE can produce standardized bibliographic listings as well as more elaborate narrative descriptions of the training material. The inclusion of a descriptive narrative element will make it easier to select relevant materials. Information about PRO-CITE is included in the appendix.

3. In keeping with the VBC Project themes of sustainability and institutional-strengthening, it is recommended that training materials development skills be strengthened within the priority countries. Ideally, this strengthening should be conducted as part of the training of trainers process. Also, the VBC Project should disseminate VBD-control training materials created in priority countries to other countries where appropriate.

4. Many of the materials identified apply generally to VBC Project training. Little however, is easily available that specifically integrates the elements of the new era of VBD control. The VBC Project can spearhead the creation of prototype training materials that address enhanced community participation, strengthened management and integrated VBD control strategies. Prototype materials can act as catalysts in programs struggling to adopt more effective modes of VBD control. With careful planning, prototype training materials can be used as an entry into a system that may otherwise be closed to change. The VBC Project should take the lead in developing prototype training materials.

Listing Guide

Listing Key

Each listing is organized as follows:

Title	
Author	(if applicable)
Publisher	
Type	(of materials)
Audience	(whom material is useful for)
Content	(what the material consists of)
Use	(how the material can be used)

The following criteria were used to categorize the material:

A. Type of material

Text
- o Book/booklet
- o Visual Aid
- o Poster
- o Photograph
- o Slide
- o Video
- o Film strip
- o Film

Other visual aids
- o Flip chart
- o Specimens
- o Equipment
- o Other

B. Target audience

1. Technical vector specialist
2. Technical medical specialist
3. Technical specialist

   a. Epidemiologist
   b. Health education/communication
   c. Training
   d. MIS/HIS/management
   e. Laboratory specialist
   f. Community participation
   g. Other

C. Content of material

1. Vectors descriptions/analysis
   - o surveillance
   - o control

2. Parasitology
3. Disease
   - o epidemiology
   - o diagnosis/treatment/case management
   - o prevention

4. Management

   a. policy formulation
   b. strategy development
   c. information systems
   d. program planning and implementation
   e. cost-benefit analysis
   f. personnel management
   g. service provision

5. Community-based programs
6. Integrated services
7. Training
8. Health communication/education
9. Other

D. Use

General reference: Useful for all specialists listed under audience specified in the audience category for the listing.

Trainer reference: Useful as a reference for the trainer; background reading, potential source of handout material.

Trainee reference: Can be used as a trainee text. Useful for the trainee to have after graduation for field reference.

9. Training Materials Review - Listings

A. WHO Technical Report Series

The WHO Technical Report Series summarizes the findings of various groups of international experts. These older reports have historical value but may have been superseded by more current reports. These reports give an overview of current activities, findings and future priorities.

1. WHO Expert Committee on Malaria

   Eleventh Report, 1964 - #291

   Type A. Text-booklet
   Audience B. 1,2,3
   Content C. 1,2,3
   Use D. General reference

2. Resistance of Malaria Parasites to Drugs

   1965 - # 296

   Type A. Text-booklet
   Audience B. 1,2,3a, 3b
   Content C. 1,2,3
   Use D. General/trainer/trainee reference

   Comment: Findings may have been superseded by more recent discoveries. Trainer needs to review before use.

3. WHO Expert Committee on Malaria

Twelfth Report, 1966 - #342

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

4. WHO Expert Committee on Onchocerciasis

Second Report, 1966

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

5. The Training of Health Laboratory Personnel (Technical Staff)

Fourth Report of the WHO Expert Committee on Health Laboratory Services, 1966 - #345

Type	A. Text-booklet
Audience	B. 3c,3e
Content	C. 1,3,4f
Use	D. Trainer/General reference, training priorities

6. Measurement of the Public Health Importance of Bilharzia

Report of a WHO Scientific Group, 1967 - #349

Type	A. Text-booklet
Audience	B. 1,2,3a,3b
Content	C. 1,2
Use	D. 1,2

7. Safe Use of Pesticides in Public Health

Sixteenth Report of the WHO Expert Committee on Insecticides, 1967 - #356

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2
Use	D. 1,2

8. WHO Expert Committee on Malaria

Thirteenth Report, 1967 - #357

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2
Use	D. General reference

9. WHO Expert Committee on Filariasis (*Wuchereria* and *Brugia* Infections)

Second Report, 1967 - #359

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2
Use	D. General reference

10. Mosquito Ecology

Report of a WHO Scientific Group, 1967 - #368

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1
Use	D. General/trainer/trainee reference

11. WHO Expert Committee on Malaria

Fourteenth Report, 1968 - #382

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

12. Parasitology of Malaria

Report of Scientific Group, 1969 - #433

Type	A. Text-booklet
Audience	B. 1,2
Content	C. 3
Use	D. Trainer reference

13. WHO Expert Committee on Malaria

Fifteenth Report, 1967 - #467

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

14. WHO Expert Committee on Insecticides

Nineteenth Report, 1971 - #4675

Type	A. Text-booklet
Audience	B. 1,2,3g
Content	C. 7
Use	D. Trainer reference

15. The Planning and Organization of a Health Laboratory Service

    Fifth Report of the WHO Expert Committee on Health Laboratory Services, 1972 - #491

    Type A. Text-booklet
    Audience B. 1,2,3,L
    Content C. 4g
    Use D. Trainer reference

16. Vector Ecology

    Report of a WHO Scientific Group, 1972 - #501

    Type A. Text-booklet
    Audience B. 1,3c
    Content C. 1
    Use D. Trainer/trainee reference

17. Schistosomiasis Control Report of a WHO Expert Committee, 1973 - #515

    Type A. Text-booklet
    Audience B. 1,2,3A/B/C
    Content C. 1,2
    Use D. Trainer reference

18. Malaria Control in Countries Where Time-limited Eradication is Impracticable at Present

    Report of a WHO Interregional Conference, 1974 - # 537

19. WHO Expert Committee on Malaria

Sixteenth Report, 1974

Type	A. Textbooklet
Audience	B. 1,2,3
Content	C. 1,2
Use	D. General references

20. WHO Expert Committee on Filariasis Third Report, 1974 - #524

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2
Use	D. General reference

21. Ecology and Control of Vectors in Public Health

Twenty-first Report of the WHO Expert Committee on Insecticides, 1975 - #561

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

22. Epidemiology of Onchocerciasis

Report of an Expert Committee, 1976 - #597

Type	A. Text-booklet
Audience	B. 2,3a
Content	C. 1
Use	D. Trainer reference

23. Engineering Aspects of Vector Control Operations

First report of the WHO Expert Committee on Vector Biology and Control, 1977, # 603

24. Criteria for the Evaluation of Learning Objectives in the Education of Health Personnel
Report of a WHO Study Group, 1977 - # 608

Type	A. Text-booklet
Audience	B. 3c
Content	C. 7
Use	D. Trainer reference

25. WHO Expert Committee On Malaria

Seventeenth Report, 1979 - # 640

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

26. Epidemiology and Control of Schistosomiasis

Report of a WHO Expert Committee, 1980 - #643

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 3
Use	D. Trainer reference

27. Environmental Management for Vector Control

Third report of the WHO Expert Committee on Vector Biology and Control, 1980 - # 649

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1
Use	D. General reference

28. Rapid Laboratory Techniques for the Diagnosis of Viral Infections

Report of WHO Scientific Group, 1981 - #661

Type A. Text-booklet
Audience B. 2,3e
Content C. 3
Use D. Trainer/trainee reference

29. Biological Control of Vectors of Disease

Sixth report of the WHO Expert Committee on Vector Biology and Control, 1982 - #679

Type A. Text-booklet
Audience B. 1
Content C. 1,3
Use D. Trainer/trainee

30. Integrated Vector Control

Seventh Report of the Committee on Vector Biology and Control, 1983 - #688

Type A. Text-booklet
Audience B. 1
Content C. 1,4
Use D. Trainer/trainee

31. Malaria Control as a Part of Primary Health Care

Report of a WHO Study Group, 1984 - # 712

Type A. Text-booklet
Audience B. 1,2,3
Content C. 3,4,5
Use D. Trainer/trainee reference

32. Prevention and Control of Intestinal Parasitic Infections

Report of a WHO Expert Committee, 1987 - #749

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

33. The Leishmaniases

Report of a WHO Expert Committee, 1984 - #701

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

34. Lymphatic Filiariasis

Fourth Report of the WHO Committee on Filiariasis, 1984 - # 702

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

35. Safe Use of Pesticides

Ninth Report of the WHO Expert Committee on Vector Biology and Control, 1985 - #720

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

36. The Control of Schistosomiasis

Report of a WHO Expert Committee, 1985 - #728

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

37. WHO Expert Committee on Malaria

Eighteenth Report, 1986 - #735

Type	A. Text-booklet
Audience	B. 1,2,3
Content	C. 1,2,3,4
Use	D. General reference

38. Resistance of Vectors and Reservoirs of Disease to Pesticides

Tenth Report of the WHO Expert Committee on Vector Biology and Control, 1986 - #737

Type	A. Text-booklet
Audience	B. 1,2
Content	C. 1,2
Use	D. General reference

39. Epidemiology and Control of African Trypanosomiasis

Report of a WHO Expert Committee, 1986 - #739

Type	A. Text-booklet
Audience	B. 3a,1,2
Content	C. 3,1
Use	D. General reference

40. WHO Expert Committee on Onchocerciasis

Third Report 1987 - #752

Type A. Text-booklet
Audience B. 1,2,3
Content C. 1,2,3
Use D. General reference

41. Vector Control in Primary Health Care

Report of a WHO Scientific Group, 1987 - #755

Type A. Text-booklet
Audience B. 1,3
Content C. 1
Use D. General reference

42. Urban Vector and Pest Control

Eleventh Report of the WHO Expert Committee on Vector Biology and Control, 1986 - #767

Type A. Text-booklet
Audience B. 1,2,3
Content C. 1,4
Use D. Trainer reference

43. Learning Together to Work Together for Health

Report on a WHO Study Group on Multiprofessional Education of Health Personnel: the Team Approach, 1988 - #769

Type A. Text-booklet
Audience B. 3c
Content C. 7
Use D. General reference

44. Strengthening the Performance of Community Health Workers in Primary Health Care

Report of a WHO Study Group, 1989 - #780

Type A. Text-booklet
Audience B. 3b,3c,3f
Content C. 4d,4f,4g
Use D. Trainer reference

B. Other WHO Publications

1. Statistical Methods in Malaria Eradication

Swaroop, S. 1966

Type A. Text-booklet
Audience B. 3g,2,1
Content C. 3,4b
Use D. Trainer reference

2. Immunology of Malaria

NMRI/USAID/WHO Workshop on the Immunology of Malaria, 1978

Type A. Text-booklet
Audience B. 2
Content C. 3
Use D. Trainer reference

3. Chemotherapy of Malaria

Bruce-Chwatt, L.J. Editor. Revised 2nd ed., 1986

Type A. Text-booklet
Audience B. 2
Content C. 3

36

Use D. Trainer reference

4. A Bibliography on the Behavioral, Social and Economic Aspects of Malaria and Its Control

   Sotiroff-Junker, J. WHO Offset Publication #42, 1978

   Type A. Text-booklet
   Audience B. 3a,3b,3f
   Content C. 4b,4d,4e,5
   Use D. General reference

5. Manual on Practical Entomology in Malaria

   Part I - Vector Bionomics and Organization of Anti-Malaria Activities

   Part II - Methods and Techniques

   WHO,, 1975 (See #6 following)

6. Manual on Larval Control Operations in Malarial Programmes

   WHO, 1973

   Type A. Text-manual
   Audience B. 1,3c,3e
   Content C. 1,4b,4d,4g
   Use D. Trainer/trainee reference

7. Manual on Environmental Management for Mosquito Control - with a Special Emphasis on Malaria Vectors

   WHO Offset Publication #66

   Type A. Text-booklet
   Audience B. 1
   Content C. 1,2,3
   Use D. Trainer/trainee reference

8. Epidemiological Considerations for Planning Malaria Control in South-East Asia Region

   WHO Regional Office SEA, 1987

   Type A. Text-booklet
   Audience B. 3a,3d
   Content C. 3,4b,4d
   Use D. General reference

9. Development of Strategies and Approaches to Malaria Control in South-East Asia

   Report of a Regional Technical Consultation, 1987

   Type A. Text-booklet
   Audience B. 1,2,3
   Content C. 4,1
   Use D. General reference

10. The Garki Project
    Research on the Epidemiology and Control of Malaria in the Sudan Savanna of the West Africa

    Molineaux, L. and Gramicca, G., 1980

    Type A. Text-booklet
    Audience B. 3a,1,2
    Content C. 1,3,4,5
    Use D. General reference

11. Manual on Personal and Community Protection against Malaria

WHO, 1974

Type	A. Text-manual
Audience	B. 3b,1,2
Content	C. 5,1
Use	D. Trainer/trainee reference

12. Terminology of Malaria and of Malaria Eradication

WHO, 1963

Type	A. Text-book
Audience	B. 1,2,3
Content	C. 1,2
Use	D. Trainer/trainee/general reference (note publication date)

13. Applied Field Research in Malaria and Africa Ad Hoc Consultation of a Scientific Working-Group

WHO, 1983

Type	A. Text-booklet
Audience	B. 1,2,3a
Content	C. 1,2
Use	D. General reference

14. Bench Aids for the Diagnosis of Malaria: Plates 1-8

WHO, 1983

Type	A. Visual aids/illustrations
Audience	B. 2,3e
Content	C. 3
Use	D. Trainer/trainee reference

15. Receptivity to Malaria and Other Parasitic Diseases

Report of WHO Working Group
WHO Europe, 1978

Type	A. Text-booklet
Audience	B. 2,3a
Content	C. 3
Use	D. General/trainer reference

16. *"Review of Education and Training for Malaria"

WHO working paper prepared for 18th Expert Committee on Malaria, 1985

Type	A. Article/paper
Audience	B. 3c,1,2
Content	C. 7,4a,4b
Use	D. General reference

* Copy to be obtained from source

17. *"Review of Global Malaria Training Activities"

Working paper prepared for the Informal Consultation on the Global Review of the Implementation of the Decisions of the 18th Expert Committee, 1988

Type	A. Article/paper
Audience	B. 3c,1,2,3
Content	C. 5,4
Use	D. Trainer/general reference

18. *"Education and Training for Malaria Control"

Hays, C.W. in Malaria and Planning for Its Control in Tropical Africa, Beales et. al., eds. Moscow, 1989 (in press)

Type	A. Article
Audience	B. 3a,1,2,3
Content	C. 5,4
Use	D. Trainer/general reference

19. Geographical Distribution of Anthropod-borne Diseases and Their Principal Vectors

WHO Vector Biology and Control Division, 1989

Type	A. Text
Audience	B. 1,2,3a,3c
Content	C. 1
Use	D. Trainer/general reference

* Copy to be obtained from source

20. An Illustrated Key to the *Anopheles* Larvae of Thailand

Rattanarithkul, R. and Harrison, B.

United States Army Medical Component,
South East Asia Treaty Organization, Thailand

Type	A. Text-manual
Audience	B. 1,3c
Content	C. 1
Use	D. Trainer/trainee reference

** Anopheline Mosquitoes of Malaya and Borneo

Reid, J.A.
Institute of Medical Research, Malaysia, 1968

Type	A. Text-manual
Audience	B. 1,3c
Content	C. 1
Use	D. Trainer/trainee reference

** The Anophelines of India - Revised Edition

Rao, T.R.
Malaria Research Center, Indian Council of Research India, 1984

** Note: Other keys are available for other countries and can be obtained from a variety of sources.

21. Manual of Malaria Entomology, 2nd Ed.

Darsie, R.F., Jr. and Ramos, A.C.
Malaria Eradication Training Center - Philippines, 1969

Type	A. Text-manual
Audience	B. 1,3c
Content	C. 1
Use	D. Trainer/trainee reference

22. *Essential Malariology, 2nd Ed.

Bruce-Chwatt, L.J.
Heinemann Medical Books, Lts., 1985

Type	A. Text-booklet
Audience	B. 1,2,3c
Content	C. 1,2,3
Use	D. Trainer/trainee reference

23. Medical Entomology Series: The Subgenus *Anopheles* in Thailand

Contributions of the American Entomological Institute, 1975

Type	A. Text-article
Audience	B. 1,2,3c
Content	C. 1,2,3
Use	D. Trainer reference

* Copy to be obtained from source

24. The Epidemiology and Control of Malaria

MacDonald, G., Oxford University Press, 1957

Type	A. Text-book
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer/trainee reference

25. Malaria Laboratory Diagnosis

Part I - Life Cycle of the Parasite
Part II - Diagnostic Procedures

A self-instructional lesson

U.S. Department of Public Health, Education, Welfare Public Health Service

Type	A. Manual
Audience	B. 1,3c
Content	C. 1
Use	D. Trainer/trainee reference

26. Malaria in Man: Its Epidemiology, Clinical Aspects and Control
A Review of Recent Abstracts on Hygiene and Communicable Diseases

Malaria Action Programme Bureau of Hygiene and Tropical Diseases - WHO, June 1986

Type	A. Text-manual
Audience	B. 1,3c
Content	C. 1
Use	D. Trainer/trainee reference

27. Vector Control Series: Training and Information Guide

Bed Bugs	- Middle Level, 1985
Cockroaches	- " "
Fleas	- " "
Housefly	- Advanced Level, 1986
Lice	- Middle Level, 1986
Mites	- Advanced Level, 1986
Rodents	- " ", 1987

Vector Biology and Control Division, WHO

Type	A. Text-manual
Audience	B. 1,2,3c
Content	C. 1
Use	D. Trainer/trainee reference

C. Other Malaria-Related Materials

1. Primary Health Care Thesaurus

Volume II, Malaria Services and Support Activities, 1988
Volume II, Malaria Service and Support Indicators, 1988

PRICOR-Primary Health Care Operations Research Project, Center for Human Services

Type	A. Text-manual
Audience	B. 2,3b,3c,3d,3g
Content	C. 4g,4f,4d,5,7
Use	D. General/trainer reference

2. Periodicals - Malaria/Tropical Disease Related

a. American Journal of Tropical Medicine and Hygiene

American Society of Tropical Medicine and Hygiene, USA Bimonthly

Type	A. Journal
Audience	B. 1,2,3
Content	C. 1,2
Use	D. Trainer and general reference

b. Annals of Tropical Medicine and Parasitology

Academic Press, U.K.
Bimonthly

Type	A. Journal
Audience	B. 1,2,3
Content	C. 1,2
Use	D. Trainer and general reference

c. Infection and Immunity

American Society for Microbiology, USA
Monthly

Type	A. Journal
Audience	B. 1,2,3
Content	C 1,2
Use	D. Trainer and general reference

d. Molecular and Biochemical Parasitology

Elsevier Biomedical Press, Netherlands

Type A. Journal
Audience B. 1,2,3
Content C. 1,2
Use D. Trainer and general reference

e. Parasite Immunology - Bimonthly

Blackwell Scientific Publications, U.K.

Type A. Journal
Audience B. 1,2,3
Content C. 1,2
Use D. Trainer and general reference

f. Transactions of the Royal Society of Tropical Medicine and Hygiene - Bimonthly

Royal Society of Tropical Medicine and Hygiene, U.K.

Type A. Journal
Audience B. 1,2,3
Content C. 1,2
Use D. Trainer and general reference

g. Tropical and Geographical Medicine

Royal Tropical Institute, Netherlands

Type A. Journal
Audience B. 1,2,3
Content C. 1,2
Use D. Trainer and general reference

3. Malaria Control in Three Communities

   The Shell Film Unit

   Type A. Slide set (24 slides)
   Audience B. 2,3a,3e
   Content C. 3,5
   Use D. Trainer/trainee reference

4. Workshop on Vector Control
   Gainesville, Florida, 1982

   USAID/USDA

   Type A. Workshop manual
   Audience B. 1,3c
   Content C. 1
   Use D. Trainer/trainee reference

D. Other Vector-Borne Diseases

1. Onchocerciasis
   Symptomatology, pathology, diagnosis

   Buck, A.A., editor. WHO, 1974

   Type A. Text-book
   Audience B. 2
   Content C. 2,3
   Use D. Trainer/trainee reference

2. Control of Lymphatic Filariasis
   A Manual for Health Personnel

   WHO, 1987

   Type A. Text-manual
   Audience B. 2,3
   Content C. 3

Use D. Trainer/trainee reference

3. Filariasis Bulletin #19

J.W. Mak, Editor.
Institute of Medical Research - Malaysia, 1983

Type A. Text-manual
Audience B. 2,3
Content C. 3
Use D. Trainer/trainee reference

4. Guinea Worm Flip Chart

World Neighbors, USA

Type A. Flip chart
Audience B. 3g (community members)
Content C. 3
Use D. Trainee/reference

5. "Guinea Worm Control in Indere"

World Health Magazine, April/May 1983

Type A. Article
Audience B. 3b,3f
Content C. 4b,4g
Use D. General reference

6. "Guinea Worm Control: Testing the Efficacy of Health Education Primary Health Care"

International Journal of Health Education-
1981, 24(4) 229-237

Type A. Article
Audience B. 3b,3f
Content C. 5,7,4b
Use D. Trainer/trainee reference

7. "A Health Education Approach to Training Village Health Workers"

International Journal of Health Education
1982/83, 3(2): 145-152

Type A. Article
Audience B. 3c,3b
Content C. 7,3
Use D. General reference

8. Improving Recognition of Onchocerciasis in Primary Care-1 Nonclassical Symptoms

Tropical Doctor, Oct. 1, 1985: 160-3

Type A. Article
Audience B. 2,3c
Content C. 3,4g,5
Use D. Trainer reference

9. "Improving Recognition of Onchocerciasis in Primary Care - 2: Learning from the Cultural Perspective"

Tropical Doctor, Jan. 1986:9-13

Type A. Article
Audience B. 2,3c,3f
Content C. 3,4g,5
Use D. Trainer reference

10. Second African Congress on Bilharziasis - Report

WHO, 1960

Type A. Text-booklet
Audience B. 1,2,3
Content C. 1,2,3
Use D. General reference

(Note publication date)

11. Schistosomiasis and Intestinal Helminths: Microscopic Diagnosis: Quantitive parasitological Diagnostic Techniques

TALC/WHO

Type A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

12. Onchocerciasis in Africa

TALC, U.K.

Type A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

13. Guinea Worm

Banks, A. and Muller, R.
TALC

Type: A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

14. Protozoa of South America

Marsden, Philip.
University of Brazilia, Brazil
TALC

Type A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

15. American Helminths

Marsden, Philip
University of Brazilia, Brazil
TALC

Type A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

16. Microscopic Diagnosis of Tropical Diseases (rural tropical hospital lab)

Cheesbrough, Monica
FIMLS, Zambia
TALC

Type A. Slide set (24 slides)
Audience B. 2,3a,3e
Content C. 3
Use D. Trainer/trainee reference

17. Dengue Hemorrhagic Fever

Vadaketk, Rebecca George
Malaysia
TALC

Type	A. Slide set (24 slides)
Audience	B. 2,3a,3e
Content	C. 3
Use	D. Trainer/trainee reference

18. Health Services Research Course: How to Develop Proposals and Design Research to Solve Priority Health Problems

WHO Regional Office for Africa and the Project for Strengthening Health Delivery Systems in Africa, 1983

Revised Edition: Health Systems Research Training Course, 1988

Type	A. Text-manual
Audience	B. 3c,3d
Content	C. 8,4d
Use	D. Trainer/trainee reference

E. Miscellaneous VBD-Control Materials

1. Equipment for Vector Control

WHO, 1974

Type	A. Text-booklet
Audience	B. 1
Content	C. 1
Use	D. Trainer/trainee reference

2. Vector Control in International Health

WHO, 1972

Type	A. Text-booklet
Audience	B. 1,2
Content	C. 1
Use	D. General reference

3. Tropical Disease Research (TDR)
Seventh Program Report
1983, 1984

WHO/UNDP/World Bank

Type	A. Text
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

4. Tropical Disease Research: A Global Partnership
Eighth Program Report, 1987

WHO/UNDP/World Bank

Type	A. Text
Audience	B. 1,2,3
Content	C. 1,2,3
Use	D. General reference

5. Common Medial Problems in the Tropics: A
Clear Comprehensive Guide.

Schull, C.R. TALC/MacMillan, 1987

Type	A. Text
Audience	B. 2
Content	C. 2
Use	D. Trainer/trainee reference

6. Lecture Notes on Tropical Medicine

Bell, Dion, Blackwell Scientific Publications, 1985

Type	A. Text
Audience	B. 3c
Content	C. 1,2
Use	D. Trainer and trainee reference

7. Atlas of Human Parasitology , 2nd ed.

Ash, L.R., and Orihel, T.C.
American Society of Clinical Pathologists, 1985

Type	A. Text
Audience	B. 2,3c
Content	C. 2
Use	D. Trainee and trainer reference

8. Basic Clinical Parasitology, 5th ed.
Brown, H. and Neva, F.A.
Appleton-Century-Crofts, 1983

Type	A. Text
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer and trainee reference

9. Chemotherapy of Parasitic Diseases

Campbell, W.C. and Rew, R.S., eds.
Plenum Publishing, 1986

Type	A. Text-book
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer and trainee reference

10. Manual of Practical Microbiology and Parasitology

T.G. Oberhofer
John Wiley and Sons, Inc., 1985

Type	A. Text-manual
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer and trainee reference

11. Periodicals

Annals of Tropical Medicine and Parasitology - Bimonthly

Academic Press

Type	A. Journal
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer reference

International Journal for Parasitology - Bimonthly

Pergamon Press

Type	A. Journal
Audience	B. 2,3c
Content	C. 2
Use	D. Trainer reference

International Journal for Parasitology - Bimonthly

Pergamon Press

Type A. Journal
Audience B. 2,3c
Content C. 2
Use D. Trainer reference

Parasitology Quarterly

Cambridge University Press

Type A. Journal
Audience B. 2,3c
Content C. 2
Use D. Trainer reference

12. Schistosomiasis in Cameroon

Tulane School of Public Health & Tropical Medicine, 1990

Type A. Video
Audience B. 1,2,3
Content C. 1,2,3,4, etc.
Use D. General reference

13. Global Links #2. The Curse of the Tropics

World Bank Film and Video, 1988

Type A. Video
Audience B. 1,2,3
Content C. 1,2,3,4, etc.
Use D. General reference

F. Community Participation

1. Community Development in Health:
   An examination of the critical issues

   Oakley, P., WHO, 1989

   Type A. Text-book
   Audience B. 3
   Content C. 4d,4f,4g
   Use D. General reference

2. Community Organization

   Goldsmith, A., Pillsbury, B. and
   Nichols, D., PRICOR, 1985

   Type A. Text-book
   Audience B. 3d,3b,3c
   Content C. 4,5
   Use D. Trainer/general reference

3. Community Health Workers

   Schaefer, M., and Reynolds, J.
   PRICOR, 1985

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 4,5
   Use D. Trainer/general reference

4. Increasing the Productivity of Community Health Workers through Supervision in the Rural Areas of Nigeria's IFE-IJESHA Zone

   PRICOR Study Summary, 1987

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 4f,5
   Use D. Trainer/general reference

5. Supporting Primary Care Programs in Korean Rural Communities through Existing Village Organizations

   PRICOR Study Summary, 1987

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 4d,5
   Use D. Trainer/general reference

6. Operations Research to Improve the Supervision, Logistical Support and Training of Rural Health Promoters in Ecuador

   PRICOR Study Summary, 1987

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 4d,5,7,8
   Use D. Trainer/general reference

7. Planning and Evaluating Community Financing in Kolahum District - Liberia

   PRICOR Study Summary, 1987

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 7
   Use D. Trainer/general reference

8. The Role of Traditional Birth Attendants in Providing Maternal Health Services in Haiti

   PRICOR Study Summary, 1987

   Type A. Text-booklet
   Audience B. 3d,3b,3c
   Content C. 7
   Use D. Trainer/general reference

9. Community Participation for Disease Vector Control

   Proceedings of the ICMR/WHO Workshop to Review Research Results, 1986
   Malaria Research Center, India

   Type A. Text-book
   Audience B. 1,2,3
   Content C. 4,5
   Use D. General reference

10. The Community Health Worker:
Working Guide
Guidelines for Training
Guidelines for Adaptation

WHO, 1987

Type	A. Text-manual
Audience	B. 2,3b,3c,3f
Content	C. 3,5,7
Use	D. Trainer/trainee reference

11. Journals/Periodicals

A. International Quarterly of Community Health Education
B. Journal of Health and Social Behavior
C. Health and Education Research

G. Training

1. Planning, Conducting and Evaluating Workshops

Davis L.N., Learning Concepts, 1974

Type	A. Text-manual
Audience	B. 3b
Content	C. 7
Use	D. Trainer reference

2. Teaching Health Care Workers: A Practical Guide

Abbatt, F. and McMahon, R., MacMillan, 1985

Type	A. Text-manual
Audience	B. 3b
Content	C. 7
Use	D. Trainer reference

3. Health Care Together -- Training Exercises for Health Workers in Community-Based Programmes

   Johnston, M. and Rifkin S., MacMillan, 1985

   Type A. Text-manual
   Audience B. 3b
   Content C. 7
   Use D. Trainer reference

4. Teaching for Better Learning

   Abbat, F., WHO

   Type A. Text-manual
   Audience B. 3b
   Content C. 7
   Use D. Trainer reference

5. Continuing the Education of Health Workers: A Workshop Manual

   Abbat, F., and Mejia, A. WHO, 1988

   Type A. Text-manual
   Audience B. 3b
   Content C. 7
   Use D. Trainer reference

6. Helping Health Workers Learn

   Werner, D., and Bower, B. Hesperian Foundation

   Type A. Text-manual
   Audience B. 3b
   Content C. 7
   Use D. Trainer reference

7. Health Care Together: Training Exercises for Health Workers in Community Based Programs

   Johnston, M. P. and Rifkin, S.B., eds. MacMillian, 1985

   Type A. Text-book
   Audience B. 3d,3c
   Content C. 4f,4g
   Use D. Trainer reference

8. Partners in Evaluation - Evaluating Development and Community Programmes with Participants

   Feurerstein, M.T. MacMillan, 1985

   Type A. Text-manual
   Audience B. 3d, 3c
   Content C. 4f, 4g
   Use D. Trainer reference

9. Training Community Health Workers Information for Action/Issues Paper

   UNICEF/World Federation of Public Health Association, 1983

   Type A. Text-manual
   Audience B. 3d, 3c
   Content C. 4f, 4g
   Use D. Trainer reference

10. Competency Based Curriculum Development in Medical Education: An Introduction

    McGaghie, W.C., et. al. WHO, 1978

    Type A. Text-manual
    Audience B. 3d, 3c
    Content C. 4f, 4g

Use D. Trainer reference

H. Management

1. Self-Assessment for Management of Health Care: How Can I be a Better Manager?

   Rotem, A., and Fay, J., WHO, 1987

   Type A. Text-manual
   Audience B. 3c,3d
   Content C. 4f
   Use D. Trainer/trainee reference

2. On Being in Charge: A Manual for Middle-Level Managers in Primary Health Care

   MacMahon, R., WHO, 1985

   Type A. Text-manual
   Audience B. 3c,3d
   Content C. 4d,4f,4g
   Use D. Trainer/trainee reference

3. Development of Appropriate Methods for Sustaining Rural Health Motivators: An Operations Research Approach

   Research Paper #20, 1986
   Connolly, C. and Dunn, L.H.

   Type A. Text-book
   Audience B. 3d,3f,3b
   Content C. 5,4f,4g
   Use D. General reference

4. Leadership for Primary Health Care: Levels, Functions, and Requirements Based on Twelve Case Studies

   Flahault, D. and Roemer, M.I. WHO, 1986

   Type A. Text-book
   Audience B. 3d,3c
   Content C. 4f,4g
   Use D. Trainer reference

I. Communication/Education

1. Communication for Child Survival HEALTHCOM/A.I.D., 1988

   Rasmuson, M.R., Seidel, R., Smith, W. A. and Booth, E.

   AED/Annenberg School of Communications ACT/Porter-Novelli/Path-Piact

   Type A. Text-book
   Audience B. 3b,3c
   Content C. 8
   Use D. Trainer/trainee reference

2. Education for Health: Manual on Health Education for Primary Health Care

   WHO, 1989

   Type A. Text-book
   Audience B. 3b,3c,3f
   Content C. 8,5,3
   Use D. Trainer/trainee reference

3. Health Education Planning
   A Diagnostic Approach

   Green, L.W., Kreuter, M.W., Deeds, S.G. and Partridge, K.B.
   Mayfield Publishing, 1980

   Type A. Text-book
   Audience B. 3b,3f
   Content C. 8,5,4d
   Use D. Trainer reference

4. Diffusion of Innovations, 3rd Ed.

   Everett Rogers
   Free Press, 1983

   Type A. Text-book
   Audience B. 3b,3f
   Content C. 8,5,4d
   Use D. Trainer reference

5. Making Health Communication Programs Work

   National Cancer Institute, 1989

   Type A. Text-manual
   Audience B. 3b,3f
   Content C. 8,5,4d
   Use D. Trainer/trainee reference

6. Teaching and Learning with Visual Aids

   INTRAH/MacMillan/TALC, 1989
   MacMillan Publishers

   Type A. Text-book
   Audience B. 3b,3f
   Content C. 8,5,4d
   Use D. Trainer/trainee reference

7. Health Education

UNICEF/AGA Khan Foundation
World Federation of Public Health Associations, 1986

Type	A. Text-manual
Audience	B. 3b, 3f
Content	C. 4f, 4g
Use	D. Trainer reference

8. Audio-Visual Communication Handbook

Compiled and edited by Pett, D.W.
World Neighbors Development Communications

Type	A. Text-manual
Audience	B. 3b,3f
Content	C. 8,5,4d
Use	D. Trainer/trainee reference

9. Facts for Life: A Communication Challenge

UNICEF, 1989

Type	A. Text-manual
Audience	B. 3b,3f
Content	C. 8,5,4d
Use	D. Trainer/trainee reference

This book has a useful section on malaria and the basic information people need to know in order to prevent malaria.

J. Epidemiology

1. The Place of Epidemiology in Local Health Work: The Experience of a Group of Developing Countries

   WHO, 1982

Type	A. Text-booklet
Audience	B. 3a,3d
Content	C. 3,4
Use	D. General reference

K. Environmental Health

1. Improving Environmental Health Conditions in Low-Income Settlements: A Community Based Approach to Identifying Needs and Priorities

   WHO, 1987

Type	A. Text-booklet
Audience	B. 3g
Content	C. 5
Use	D. General reference

2. WASH Publications

   The A.I.D.-funded Water and Sanitation for Health (WASH) Project has produced an extensive collection of water supply and environmental sanitation training materials of potential value for training for community-based VBD control. The WASH documentation produces a descriptive listing of its materials, and these can be accessed by the VBC Project.

In general WASH materials can be classified as follows:

Type	A. Text-manuals
Audience	B. 3c,3b,3f,3d
Content	C. 7,5,6,4d,g
Use	D. General reference

3. Other A.I.D. project sources include PRITECH and the Clearinghouse on Development Communication.

L. Additional Medical Entomology References

1. Entomology in Human and Animal Health
   Harwood, R.F. and James, M.T.
   MacMillan, 1979

Type	A. Text-booklet
Audience	B. 1
Content	C. 1
Use	D. General/trainer reference

2. Malaria: Principles and Practice of Malariology vols. I and II

   Wernsdorfer, W.H. and MacGregor, I. (eds.)
   Churchill Livingstone, 1988

Type	A. Text-booklet
Audience	B. 1
Content	C. 1
Use	D. General reference

3. Medical and Veterinary Entomology

Kettle, D.S.
John Wiley and Sons, 1987

Type	A. Text-manual
Audience	B. 1
Content	C. 1
Use	D. General/trainer reference

4. Mosquito Ecology

Service, M.W.
John Wiley and Sons, 1976

Type	A. Text-manual
Audience	B. 1
Content	C. 1
Use	D. General/trainer reference

5. The Natural History of Larval Mosquito Habitats

Harwood, R.F. and James, M.T.
Academic Press - Harcourt Brace Jovanvich, 1979

Type	A. Text-manual
Audience	B. 1
Content	C. 1
Use	D. General/trainer reference

6. Ecology of Mosquitoes: Proceedings of a Workshop

   Lounibos, L.P., Rey, J.R., and Frank, J.H.
   Medical Entomology Lab - Vero Beach

Type	A. Text-manual
Audience	B. 1
Content	C. 1
Use	D. General/trainer reference

M. Technical References: Selected Sources

1. Defense Pest Management Information Analysis Center, Forest Glen Section
   Walter Reed Army Medical Center
   Washington, D.C.

2. International Center for Public Health Research
   University of South Carolina
   McClellanville, South Carolina

3. Walter Reed Army Institute of Research
   Washington, D.C.

4. Walter Reed Biosystematics Unit
   Smithsonian Museum Support Center
   Suitland, Maryland

5. Selected Libraries

   National Library of Medicine, Bethesda, M.D.
   Library of Congress, Washington, D.C.
   Smithsonian (Natural History) Library,
   Washington, D.C.
   USDA, Beltsville, M.D.

6. Computer Databases

Agricola
Biosis
Medline
Walter Reed Biosystematics Unit

Appendix A

List of Participants

VBC TRAINING PROGRAM DEVELOPMENT WORKSHOP

JULY 18-19, 1990

List of Participants

Maurice Apted
International Communication
Enhancement Center
Tulane University SPH/TM
1430 Tulane Avenue
New Orleans, Louisiana 70118
(504) 587-7393

Basile Kollo
Tulane SPH/TM
1501 Canal Street
New Orleans Louisiana 70112
(504) 522-1427

Barney Cline
Tulane University
Department of Tropical Medicine
1501 Canal Street, ROom 504
New Orleans, Louisiana 70112
(504) 588-5199

McWilson Warren
Centers for Disease Control
Center for Infectious Diseases
Atlanta, Georgia 30333
(404) 639-3466

John D. Sexton
Centers for Disease Control
Center for Infectious Diseases
Atlanta, Georgia 30333
(404) 488-4115

L. J. Legters
Uniformed Services University
for Health Sciences
4301 Jones Bridge Road
Bethesda, Maryland
(301) 295-3170

Uwe Brinkmann
Harvard University
665 Huntington Avenue
Boston, Massachusetts 02115
(617) 432-4625

Joe Valadez
HIID, 1 Eliot Street
Cambridge, Massachusetts 02138
(617) 495-3903

Donald R. Roberts
Uniformed Servcies University
for Health Sciences
4301 Jones Bridge Road
Bethesda, Maryland
(301) 295-3734

Andy Gordon
School of Public Health
University of So. Carolina
Colombia, So. Carolina 29208
(803) 777-7096

<u>S&T/Health</u>

A. Dennis Long
S&T/Health
Agency for International
Development
Room 709, SA-18
Washington, D. C. 20523
(703) 875-4743

<u>VBC Staff</u>

Richard G. Andre
Andrew Arata
Robert Lennox
Peggy Sullivan
Vector Biology and Control
1611 No. Kent, Suite 503
Arlington, Virginia 22209
(703) 527-6500

Appendix B

Daily Agenda and Description

VECTOR BIOLOGY & CONTROL

Vector Biology & Control Project
1611 North Kent Street, Suite 503
Arlington, Virginia 22209
(703) 527-6500

Telex 248812 (MSCI UR)
Cable MSCI Washington, D.C.

TRAINING PROGRAM DEVELOPMENT WORKSHOP

July 18-19, 1990

Daily Agenda

Day One

8:30 AM - 9:00 AM — *Welcome and Introduction (Lennox/Apted/Gordon)*

- *Participant Introductions*
- *Workshop Goal and Objectives*
- *Anticipated Outcomes*
- *Participant Expectations*

9:00 AM - 9:15 AM — *Project Overview VBC (Lennox)*

- *Project Objectives*
- *Project Themes: Institutional Strengthening, Sustainability and Enhanced Community Participation*
- *Proactive Programming*

9:15 AM - 9:30 AM — *A.I.D. (Long)*

- *Role of Training in Reaching Project Objectives*
- *Training and Project Themes*

9:30 AM - 10:00 AM — *Issues and Concerns: Training and Related Matters (Participants voice concerns, problems, issues for possible consideration during the workshop)*

10:00 AM - 10:15 AM — *Break*

10:15 AM - 10:45 AM — *Progress Report: Training Strategy and Materials Review (Apted)*

10:45 AM - 11:15 AM — *Training Agenda Formulation: First Steps*

a: *Deciding the Parameters (Small Groups)*
- *Priority Countries (AFR/ANE/LAC)*
- *Priority Diseases*
- *Priority Training Targets/Audiences*

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11:15 AM - 12:30 PM	*Plenary - Group Reports and Discussion*
12:30 PM - 1:00 PM	*Lunch Break*
1:00 PM - 1:45 PM	*b: Identifying Training Needs (Small Groups)* - *Needs assessment (N.A.) process/content?* - *Who conducts the N.A.?* - *Needs assessment product?* - *What happens after the N.A.*
1:45 PM - 2:30 PM	*Plenary - Group Reports, Discussion and Synthesis*
2:30 PM - 3:00 PM	*c: Designing Training Interventions* *NIGER CASE STUDY* *Introduced by A.I.D. representative* - *Background to Strategy Document* - *How strategy meets A.I.D. criteria* - *How strategy is put into practice*
3:00 PM - 3:45 PM	*Plenary Group (Discussion Issues)* *General* - *What should the future strategy development process be?* - *Who should be involved and how?* - *What role should subs play in the planning and implementation processes of training interventions?*
3:45 PM - 4:30 PM	*Small Group Working Session* *Niger Training Agenda* *Specific* - *How should the Niger training recommendations and plan of action be implemented?* - *What are the various training targets?* - *What training interventions do they need?*
4:30 PM - 5:00 PM	*Group Progress Reports*
5:00 PM - 5:30 PM	*Daily Review Session* - *What have we accomplished?* - *What do we need to accomplish?* - *How effective is the workshop process?*
5:30	*Adjourn*

Day Two

8:30 AM - 9:00 AM	*Orientation Session* - *Fresh Insights* - *Unexpected Problems* - *Additional Agenda Items*
9:00 AM - 10:30 AM	*Project Year Two - Draft Training Agenda (Who, What, How, Why, When, How Much)* *Working Group Activity (AFR/ANE/LAC)* *Draft Training Agenda Format Categories* *1. Country or Region* *2. Activity Description* - *Purpose* - *Training Audience* - *Sequence of Sub-Activities* *3. How the Activity Addresses Project Objectives and Themes* *4. Who will Participate* *5. Duration of the Activity (include approximate start/end dates)* *6. Anticipated Budget Categories*
10:30 AM - 10:45 AM	*Break*
10:45 AM - 12:30 PM	*Plenary: Group Reports and Discussion*
12:30 PM - 1:00 PM	*Lunch*
1:00 PM - 2:00 PM	*Training Strategy/Agenda Recommendations - Years 3-5* *Working Group Activity* - *Africa* - *Asia/Near East* - *Latin America/Caribbean*

2:00 PM - 3:00 PM	*Plenary Session*
	Years 3-5 Agenda Recommendations
	Discussion and Consensus
3:00 PM - 3:15 PM	*Break*
3:15 PM - 4:00 PM	*Training Material Development Priorities for Years 3-5*
4:00 PM - 4:45 PM	*Workshop Review*

	- *Major Accomplishments*
	- *Follow-Up Activities*
	  - *VBC*
	  - *Subcontractors*
	- *Unmet needs Identified*

4:45 PM	*Workshop Closure*

ANTICIPATED OUTCOMES

1. A draft version of the Year 2 Training Agenda according to format.

2. A list of possible training agenda and strategy priorities for Project Years 3 - 5.

3. Increased understanding of the strengths and obstacles which may affect VBC training activities.

4. Increased awareness of the role of training in helping meet VBC Project objectives related to institutional strengthening, sustainability and enhanced community participation.

VECTOR BIOLOGY & CONTROL

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(703) 527-6500

Telex 248812 (MSCI UR)
Cable MSCI Washington, D.C.

Training Program Development Workshop

July 18-19, 1990

BACKGROUND

Training has been designated a major activity area in the second phase of the VBC Project.

VBC sponsored training will address three major VBC project objectives:

- strengthened institutional development
- sustainability of local VBC entities and activities
- increased emphasis on development of community-based approaches

In developing the agenda the project seeks to move from "reactive" to "proactive" mode. In doing so, the project will adopt a new systematized approach to assessing and responding to training needs. It is expected that this approach will better enable us to meet project objectives by more clearly identifying specific training activities which will both help sustain local VBD control efforts, and strengthen national VBC institutions.

Two priority disease areas have already been determined for training initiatives in Project Year 2. These are: MALARIA AND DENGUE FEVER.

WORKSHOP GOAL

The goal of the workshop is to prepare a draft VBC training agenda for Project Year 2 for consideration by the TAC.

OBJECTIVES

1. Examine issues including strengths and obstacles which may affect sub-contractor participation in VBC training activities.

2. Identify specific training activities for inclusion in the draft Year 2 training agenda.

3. Develop suggestions and/or recommendations concerning VBC training strategy and agenda for Project Years 3 - 5.

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Appendix C

VBC Project Training Strategy Issues

VECTOR BIOLOGY & CONTROL

Vector Biology & Control Project
1611 North Kent Street, Suite 503
Arlington, Virginia 22209
(703) 527-6500

Telex 248812 (MSCI UR)
Cable MSCI Washington, D.C.

VBC TRAINING PROGRAM

DEVELOPMENT WORKSHOP

JULY 18–19, 1990

DISCUSSION/ISSUES PAPER

VBC PROJECT
TRAINING STRATEGY ISSUES

Maurice Apted
VBC Training Consultant

Managed by Medical Service Corporation International
under contract to the U.S. Agency for International Development

V B C PROJECT TRAINING STRATEGY ISSUES

Project Objectives

Emphasis on

- Sustainability
- Institutional Strengthening
- Increased Community Participation

How will training activities help achieve these objectives?

Priority Diseases - VBC Year 2

- Malaria
- Dengue Fever

V B C TRAINING STRATEGY Elements of Effective Training

Training Program Development (TPD) Process: A systematic approach to sustainable training for institutional strengthening.

A. PROCESS ELEMENTS

Four broad steps in the TPD process:

1. Situation and Needs Assessment
2. Plan Training Program/Design Training Activities
3. Implement Training Plan/Conduct Training Activities
4. Evaluate Training - effectiveness and impact

B. EFFECTIVE SUSTAINABLE TRAINING : MAJOR REQUIREMENTS

- organizational/management commitment
- administrative/logistical/resource support
- training activities based on actual job requirements
- actual job requirements reflect community service needs

- community service needs identified both through appropriate epidemiological surveillance; and felt community priorities

- skilled and effective trainers

Additionally for training to support community-based activities:

- community involvement in needs identification, planning and resource provision, training implementation and training evaluation especially for training at the PHC and Community level.

Local "training team" competency requirements

- Capacity to assess needs and situation(s) accurately in response to changing social and technical circumstances

- Technical expertise to develop training programs that meet needs (including curriculum design and training materials development)

- Technical and resource capacity to organize and conduct training

- Technical expertise institutional commitment to training evaluation

Resource Requirements

- funding capability for the following:

  - needs assessment/evaluation travel
  - ongoing training supply needs
  - participant/trainer per diem - type expenses
  - materials production

Management Support Requirements

- commitment to training as a continuing cd requirement for human resource and organizational development
- recognition of training as a systematic process
- capacity to provide funds/resources for training
- ability to provide appropriate supervisory follow-up support for trained staff

<u>V B C Training Audiences: Who should be trained?</u>

A. Medical/Technical Level

- Entomologists, Physicians, Lab Personnel, Epidemiologists, Health Education/Communication Specialists, Training Specialists

V B C TRAINING STRATEGY : Process issues

Determining VBC Training Priorities

Step 1: Situation Analysis/Needs Assessment (SA/NA)

Major Outcomes of SA/NA

1. Determination of national needs/priorities
2. Determination organizational capabilities and needs
3. Accurate determination of the range of training needs
4. Source material for intervention planning

Process Issues

1. Who will participate in the SA/NA process?

2. How do we determine where to begin SA/NA activities?
   - Where are the needs greatest?
     - between regions
     - within regions
     - at the national levels

3. Regional and National levels

a. For SA/NA activities how will national VBD/Health officials participate?

b. How should the SA/NA activity be conducted?
   - team approach (all sub-contractors/VBC staff)
   - individual approach with selected subs
   - USAID in-country office with local officials
   - some combination of the above

What to "Analyze" and "Assess"

Organization and Service

1. Where are organizational capacities greatest? What are these? What needs? Which of these can training address? Can they support training?

2. Where are organizational capacities most in want? What needs? Which needs can be addressed by training?

3. What VBD control program activities exist? Strengths and Needs?

4. What are the epidemiological surveillance needs: How are VBD control services organized? How much community participation and how effective?

B. Managerial/Administrative Level

- Program Planners, Program Managers, Supervisors, Information Specialists, Computer Operators, (Policy Makers?)

C. Primary Health Care Level

- service providers, community health workers, VBD field workers

D. Community Level

- Community volunteers, PVO/NGO personnel, community members

E. Other Development Sector workers

- mass media, agriculture, rural development, education, private enterprise

Institutional Strengthening of In-service Training

- Establishing/strengthening Training capacity through Training of Trainers (TOT) technical assistance program

An effective FIELD TRAINER technical assistance program will achieve the following:

Provide capacity in:
- learning needs assessment
- training session design
- materials design and production
- conducting training using methods appropriate to objectives and learners.
- learning assessment

An effective MASTER TRAINER technical assistance program will achieve the following:

Provide capacity in:
- management skills for training program development. These include capacity to plan, implement and evaluate activities in the following area:

- community/organizational needs assessment
- training plan development including budgeting
- job specification
- task analysis
- curriculum development
- training implementation
- training program evaluation

Training

1. What is the state of training? Pre- and In-service?

   For In-service training

   a. What in-service needs exist. Who?
      What?

   b. Is there a viable/potentially viable in-service training capacity? In-country? Regional?

      What is it viable in? What would it take to make viable?

      - management support for training
      - in-service training system exists and operates for VBD needs.
      - potential in-service system can be established

      - quality of present training?
      - competency of trainers?
      - relevance of training to the VBD problem?

        Curriculum

      - derived from relevant and significant VBD job tasks?
      - appropriateness of learning objectives specification?
      - currency of technical information being learnt?
      - appropriateness of training methods for audiences and learning objectives?
      - adequacy and suitability of training material and other training resources?
      - appropriateness of assessment and evaluation strategies?

   c. How significant are the identified training needs?

      - numbers affected?
      - impact on service delivery development?
      - impact on surveillance?
      - impact on community participation and involvement?
      - felt priority?

Pre-service Training

   a. What is the extent of VBD training at the pre-service level?

      - who is trained?
      - what are they trained to do?
        how are they trained to do it?
      - how effective is the training?
      - do trained graduates have the opportunity to practice

in the field? Can present pre-service institutions meet VBD service delivery demands?
- How qualified are pre-service instructors?

b. Pre-service curriculum

- Does it contain the essential elements such as:
  - written learning objectives derived from actual job task requirements for effective VBD control?
  - methods consistent with learning objectives?
  - reliable assessment procedures?
  - access to appropriate learning resources?
  - adequate field skills development opportunities?

MAJOR ISSUE: WHAT SHOULD BE THE RELATIONSHIP BETWEEN PRE-SERVICE AND IN-SERVICE VBD TRAINING? WHERE SHOULD VBC PROJECT EMPHASIS LIE?

DEVELOPING A TRAINING ASSISTANCE PLAN: Suggested Process

Process

1. Needs Assessment/Situation Analysis
2. Clarify Findings
3. Prioritize Needs
4. VBC and partners decide what priorities they can support
5. VBC Technical Assistance Plan developed
6. VBC assistance plan implemented

Criteria

1. Does the plan strengthen institutions? How?
2. Does the plan foster sustainability? How?
3. Does the plan address the issue of community participation? HOW?

Appendix D

Regional and National VBC Training in Africa

VBC Training Program

Development Workshop

July 18-19, 1990

Discussion/Issues Paper

Regional and National VBC Training in Africa

Dr. Basile Kolo
Tulane University
School of Public Health
and Tropical Medicine

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Opportunities and Threats to the VBC Plan

1. Regional

1.1 Non-uniformity of Languages

English-speaking countries are still mostly under British influence through their appurtenance to the Commonwealth and associated bodies. Most of them have good and long-standing collaborative relationships with schools of public health, hygiene and tropical medicine in England.

French-speaking countries belone to the "Francophonie" Alliance an are still under the strong but declining influence of France. The influence of Canada through Quebec is increasing.

Public health programs in these countries are generally weak because 1) of a lack of public health schools in France; 2) most of the preventive medicine activities of French technical assistance were directed largely at the "Controle des grandes Endemies," which was carried out by military doctors.

Spanish-and Portuguese-speaking countries are still very much linked to their colonial masters.

1.2 Regional Organizations with Public Health Focus

OCCGE (West Africa) and OCEAC Central Africa do not collaborate very well with nationals. Countries involved in these two organizations are mainly French-speaking.

1.3 Regional Leadership

The leadership role or non-leadership role of a country within a region is very critical for the choice of the site of a regional training center. It can be an obstacle or an advantage depending upon 1) political relationships and relationships with other countries and 2) the stability and popularity of the actual leader.

1.4 Nigeria

Nigeria *must* always be considered a separate entity. *Never* forget that one African out of five is Nigerian!

1.5 Existing public health schools

Some of these public health schools were primarily designed to be "regional." It is important to know this to avoid conflict over the choice of site. Examples include the schools in Lome, Togo and Brazzaville, Congo.

Sometimes it is possible to build on what already exists (e.g., OCEAC in the late 1970s with CDC).

2. Country Level

General observations

1. Most of the countries have a ministry of health (MOH) that controls the schools for paramedicals and a ministry of education with a medical school that is part of the university system. Other countries also have an institution directed toward research.

When choosing an institution, consider the following facts:

- THe MOH has external services all over the country that operate at the community level. Medical schools or universities do not have external services. Any protocol agreement with a university or medical school must provide for intersectorial collaboration with the MOH.
- The protocol agreement should include selection criteria for nationals to be directly involved in the partnership. It is important to leave the responsibility

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of choosing those national participants to the host country (because of national pride).

- It is also important to take into consideration other groups already functioning in country with similar activities.

Example of Cameroon as a Country-Level Intervention

We know that:

- It is located on the West Coast of Africa, between the 2° and 13° north latitude anbd the 9° and 16° east longitude
- GNP ($US) = 910
- population of about 10 million inhabitants
- under five mortality rate (per thousand) = 156
- adult literacy rate (male/female) = 68/55
- life expectancy at birth = 52 years

Cameroon has been implementing a primary health care (PHC) program since the early 1980s with the assistance of several nongovernmental organizations (NGOs) and government organizaitons in the entire territory:

- o USA through USAID (SESA project): Adamaoua and South provinces;
- o West Germany through GTZ: Northwest, Southwest and Littoral provinces;
- o France through AFVP (Association Francaise de Voluntaires de Progres): North and Center provinces;
- o Holland through SNV (Netherlands Volunteers): East province;
- o Belgium through "Projet Belgo-Camerounaid (SIM): in Diamare Division (Maroua) in the Extreme North province; and
- o Protestant and Catholic Health Services: 30 percent of the entire county in all 10 provinces.

All of these agencies have agreements with the MOH.

There is also collaboration between the MOH and the medical school (CUSS), which uses MOH health units to provide field training to its senior medical students. On several occasions medical students have been actively involved in MOH control programs or research activities leading to an M.D. dissertation.

How to Foresee the Role of the University (Medical School and other Departments)

There is great evidence that the MOH alone cannot implement a comprehensive control rpogram because of several weaknesses in its system, including:

- a lack of properly trained health personnel at all levels of the health care system;
- inadequate laboratory diagnostic capabilities;
- incomplete and irregular data reporting; and
- inadequate operational research capabilities.

The University of Yaounde can help the MOH fill the gap in these institutional shortcomings in at least two ways:

- By developing interinstitutional links with other foreign unviersities that have the know-how and could assist in operational research team development by providing the training for future trainers and by participating in joint control projects in country;

- By developing human resources for the MOH by organizing regular training and refresher courses for MOH personnel and by assisting the MOH in the design and evaluation of its programs.

Appendix E

Training for Vector-Borne Disease Control

VECTOR BIOLOGY & CONTROL

Vector Biology & Control Project
1611 North Kent Street, Suite 503
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Cable MSCI Washington, D.C.

VBC TRAINING PROGRAM

DEVELOPMENT WORKSHOP

JULY 18 – 19, 1990

DISCUSSION/ISSUES PAPER

TRAINING FOR VECTOR BORNE DISEASE CONTROL NOTES AND COMMENTS

Dr. McWilson Warren
SRP, C/D
CDC

Managed by Medical Service Corporation International
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VBC PROJECT WORKSHOP

NOTES AND COMMENTS

Item: Historical Aspects of ICMRT and ICMR

It is important that these programs be reviewed and the lessons learned in this effort be incorporated into the development of the training program to be sponsored by AID through the Vector Biology and Control Project. This program began with high hopes of bringing lasting value through the strengthening of local institutions for research and training in health issues of high priority in the country concerned. Eventually the "T" for training was dropped and the personnel development features of the program lapsed with, as far as I am aware, with no residual programs geared to help resolve the personnel issues facing health delivery systems in the developing tropics.

There is a basic truth which is frequently acknowledged but infrequently followed. To be a teacher is a learned skill. Success in professional degree programs, in even the most prestigious institutions, does not automatically confer the skills and experience required to evolve appropriate personnel development programs. We must recognize this constraint and deal with it or the proposed VBC program will become another in the long list of "training programs" that have been defeated by the scope of personnel problems in health delivery systems in developing countries.

Caution must be exercised in trying to involve traditional programs for "health education" in schools or departments of public health in this kind of effort. All too often this issue has been passed from the people dealing with the technical features of vector-borne disease control to an organizational area with "education" in its title in the hope that this would produce some magical solution. Such approaches to transferring responsibility have proved remarkably ineffective. The substantive aspects of the disease to be controlled must have a great deal of influence on the tasks to be performed and how individuals are trained to carry them out.

Programs to develop decision makers must be given very careful attention. There is a need for people who understand the technical and cultural facets of the occurrence of a

given disease in a particular area, and are prepared to make practical decisions about intervention methods that are both epidemiologically correct and appropriate for available resources. Officials in charge of such efforts must be confident, experienced and technically informed. The training programs for the development of these managers must be carefully prepared and should be a major part of any agenda that purports to deal with the training needs of vector-borne disease control activities.

Training has traditionally been given a high priority verbally, but tended to be relegated to a much reduced position when resources were to be allocated. Program officials in both developed and developing countries must recognized that personnel development is an expensive process and requires the best talent available.

Item: Institutional Strengthening

This a vital component of any program involved in the broad issue of personnel development for health delivery systems. There is no question but that these institutions must be local in nature in order to deal with the cultural and epidemiological nuances of a particular area. Whether the program is developed for national or regional facilities must depend upon the individual situation.

The idea of counterpart institutions in the U.S. is excellent and has enormous potential if the goals and objectives are understood and agreed to by both parties. The reasons for the development of a relationship with an institution in this country should be made very clear, and any divergence from an established plan should be discouraged. Training and associated features of curriculum development, communication methodologies, task oriented instruction, etc. must always occupy center stage. Such an arrangement is not to be the means by which a scientist from the counterpart institution is brought to a field study area to investigate a subject in which he/she has primary interest. This statement should in no way be construed as an effort to discourage field research. On the contrary, this activity is as an important to the overall success of disease control programs as ever, and if field investigations can be pursued as a part of the institutional relationship, so much the better. However, the primary focus must not be obscured and the exchange of personnel in either direction must be associated with a clear definition of what is to be achieved by the effort.

The need for well defined goals and curricula cannot be over emphasized. Training skills must be imparted to every perso expected to work at a supervisory level. The value of training and good personnel management techniques must continually emphasized. Every phase of the project should have evaluation as a major component. Programs and approaches that are unproductive and not associated with specific goals should be abandoned as rapidly as possible.

Item: Training Audiences

There is a need for all levels of personnel in health delivery systems in developing countries. In the past there has been tendency to concentrate on the training of lower ranking technicians. Even here the curricula were prone to be academic and unfocused. Task oriented training with the hands on ability to carry out an activity as the primary approach to evaluation have received lip service but frequently little more. Consequently, there are usually large numbers of field and laboratory personnel with only a sketchy idea of what they are to do, how it should be done and how the task, when performed, will contribute to the success of the program. Communication methods have tended to be pedantic and archaic. Too much tell and too little do.

Possibly, one of the most significant areas of failure has been in the long term development of decision makers. People have tended to become district, provincial or even national directors on the basis of highly variable criteria. There is no known program through which there is a concerted and focused approach for the development of technically informed, management trained, field experienced senior officials who are prepared to confidently look as a program and make an informed decision as to what should or should not be done. Many such officials have been sent, at considerable expense, to study in institutions in developed countries. Unfortunately there is usually little communication between the program that sends and the institution that receives. Programs for advanced degrees in Western universities frequently have little relevance to the problems the student will face when he/she returns to their home country. Considerable care needs to be devoted to how the Western institution can effectively prepare these future decision makers to be good managers use available resources in the most effective way possible. This would require a detailed assessment of what a program director is expected to do and then determine what can be done to best prepare him/her for this task. We must consider such areas and personnel management, training technologies and resource assessment in

additional to the technical and investigative areas that we usually handle much more effectively. How this very important job is to be accomplished remains to be determined. Perhaps this should be a primary mandate of the VBC agenda on training.

Item: Community-based Approaches

This is another subject area in which so much has been said that there is a general conclusion that there is a consensus on the definition of "community based efforts in disease control." This is far from the truth. To many officials in developing countries, there is a profound lack of understanding of what is meant by the term and more importantly there is no basic commitment to the potential value of the approach. The concept of community involvement in disease control activities has, in many situations, been introduced from the outside and is often a source for significant outside assistance and funding which helps to decide in favor of such an approach. However, these concepts do not imply that the local officials attach any value to such methods nor do they concede that community participation in decisions concerning its own health could be of value. A means must be found to insure that national, provincial and district officials believe in and are committed to the idea of community involvement in health delivery system activities. It may be particularly important that the curricula of local medical schools reflect this concept. It will not be appropriate that we merely seek methods that can be performed at the village level. It has to be better than this or the whole effort will be relegated to "busy work."

Item: Proactive Stance by the VBC Project

This is a very encouraging development. There is a real problem with waiting for the local AID mission to request assistance in a particular area. For the most part there is not sufficient technical expertise in the mission to determine the specific areas where assistance is needed and can be effective. Consequently, there is a tendency to have the consultant do what he/she feels is important and such short term projects may have little relevance to the real needs of the program. As an individual who has participated in such activities, I would be much more comfortable working within the concept of an ongoing activity that has goals to which I can relate and clearly addresses a need recognized by local officials. It would be difficult to attribute too high a value to the VBC Project having the means by which it can develop and pursue a defined program in training and personnel development for the next five years.

Appendix F

Preliminary Position Paper on VBC Training Issues

VECTOR BIOLOGY & CONTROL

Vector Biology & Control Project
1611 North Kent Street, Suite 503
Arlington, Virginia 22209
(703) 527-6500

Telex 248812 (MSCI UR)
Cable MSCI Washington, D.C.

VBC TRAINING PROGRAM

DEVELOPMENT WORKSHOP

JULY 18 - 19, 1990

DISCUSSION/ISSUES PAPER

PRELIMINARY POSITION PAPER

Dr. Uwe Brinkmann
Harvard University
School of Public Health

Managed by Medical Service Corporation International
under contract to the U.S. Agency for International Development

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Preliminary Position Paper

VBC Training Issues

1. **Development of community-based vector-borne disease control programmes and requirement for training approaches?**

   There will be little chance for classic type vertical programmes in the future. In dengue fever a promising control policy based on communal involvement has been developed by CDC Atlanta staff. A similar approach will probably have to be taken in malaria as well. Training will be needed for community leaders and people involved in mass media. In order to implement this training (to a large degree in local languages), trainers will have to be trained, model curricular and materials will have to be developed.

2. **Training target priorities:**

   Give equally high priority to technical/medical level personnel/systems and management/supervision level personnel to enable them to take care of the PHC service delivery level.

3. **Issues concerning local/national/regional training?**

   - *Development of policies for malaria control in Africa*
   - *Implementation of malaria control*

4. **Training challenges or problems?**

   - *Training of health planners and decision makers*
   - *Project development seminars with decision makers*
   - *Development of curricula and teaching materials for trainers training in vector biology, epidemiology, health policy and management, health economics, community oriented health interventions*
   - *Organizational problem if training has to be carried out overseas*
   - *Language problems*

5. **Other general or specific issues for training strategy?**

   Inclusion of local expert level staff/local training institutions in countries which will eventually continue training programmes. Translation of teaching materials into vernacular languages. Testing of teaching materials including anthropologist and social scientists. Using training to develop institutions.

6. **Existing training materials and agendas.**

   Harvard teaches a number of courses and possesses the necessary training materials relevant to vector biology and control. An overview can be given at the meeting.

Appendix G

Stage I, Stage II and Stage III Descriptions

options exist (Table 1) that will provide a measured, appropriate response proportionate to the problem and capable of producing documentable improvement.

Stage I Programs

Stage I programs are those in the rudimentary phase of development. Few, if any, government resources may be available and the system is usually small and may have management problems. Vector-borne diseases are a recognized public health problem, but virtually no infrastructure exists to successfully conduct an operational control program. Concerted vector-borne disease programs, if they exist, are usually being implemented by multilateral, bilateral or PVO personnel, (e.g. refugee and disaster relief personnel). Agency investments in Stage I programs should focus on initial planning, which should include policy and strategy development, problem identification through surveillance, institutional strengthening through training and assistance in project management. The Agency should initiate linkage to other bilateral or multilateral programs at this stage.

Stage II Programs

Stage II programs represent an established system within a host country, but they are operationally ineffective. Moderate donor investments in commodities may exist, but these resources are not being used optimally. Stage II programs may be perceived to need focus, require better management and lack an effective data management system. Applied research and coordination with PHC services may be additional areas of need. As for Stage I systems, Agency investments will also cultivate human and institutional development and linkage with other programs and donor coordination. The impact of vector-borne diseases on socio-economic development should be examined as part of overall program planning.

The emphasis for assisting Stage II programs should be on improving the effectiveness of existing institutions and encouraging control efforts for high-risk populations within the framework of stated priorities and sustainable resource commitments. The most promising areas of investment in Stage II programs include the policy dialogue to provide a rational basis for future program planning, introduction of new technologies, assistance in operational research to focus interventions, and management strengthening through in-country or limited participant training.

Stage III Programs

Stage III programs are large-scale national programs that may have been supported by A.I.D. or other donors in the past. They have usually operated as vertical programs under the direction of semi-autonomous malaria directorates. Stage III investments will include Stage I and Stage II elements, but a portion of the support may be used for commodity procurement. Stage III investments will emphasize program sustainability, cost-sharing, quality control, management, improvement of cost effectiveness and impact measurement.

Most existing vector-borne disease control programs are vertically structured, but the trend in LDCs is to integrate such services into the PHC systems. Assistance to Stage I and II programs can be effectively integrated through initial national program planning and institutional strengthening. Programs in Stage III will require careful redefinition of goals and control interventions employed. In addition, the PHC systems may require strengthening before they are capable of absorbing the functions of the vector-borne disease and control programs. In some instances, diagnosis and treatment may become a PHC function, whereas vector control operations may require parallel services.

Table 1. Program Content and Areas of Investment in Vector-Borne Disease Control Projects at Different Stages of Development

		I	II	III
1.	Policy and Strategy Development	X		
2.	Surveillance and Data Management	X	Continue as needed	
3.	Program Management	X	Continue as needed	
4.	Training	X	Continue as needed	
5.	Limited Scope Control Programs		X	
6.	Impact Analysis/Evaluation		X	X
7.	Testing and Introduction of New Technologies		X	X
8.	National Control Programs			X

Appendix H

VBC Five-Year Objectives and Strategies

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VECTOR-BORNE DISEASE

CONTROL

CHANGING STRATEGIES

FIVE YEAR OBJECTIVES AND STRATEGIES

Abstracted from
VBC 1990 Project Work Plan **Pg. 13–20**

Managed by Medical Service Corporation International
under contract to the U.S. Agency for International Development

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3. The VBC Approach

Despite the differences highlighted above, the three regions share some common problems and face many of the same challenges. Governments in all three regions must confront the reality of limited resource availability during the 1990s. They also must identify and use new methods of disease control to complement or replace traditional vector control operations. In every region, methods that emphasize community participation and human behavioral change, such as personal protection and source reduction, will be particularly important.

It is generally agreed that the control of vector-borne diseases should be an integral part of a country's national health program and that control measures should be incorporated to the extent possible into a primary health care system of surveillance and service delivery. Recommendations for accomplishing these goals often emphasize the necessity of community collaboration in planning and implementating control strategies. Guidelines for individual, community and health facility collaboration have been developed, but detailed procedures for their implementation have not.

The multidisciplinary team assembled by MSCI has established as its goal the development of operational procedures for vector-borne disease control that reflect variations in national financial and manpower resources, cultural factors, the state of health infrastructure development, and rapidly changing ecological conditions exacerbated by development technologies.

VBC II will work with A.I.D. Bureaus and Missions as well as local institutions to improve disease control efforts in both vertical and integrated programs. The project will emphasize approaches that strengthen the viability of local efforts to control vector-borne diseases.

Five-Year Objectives

Institutional development is one of VBC II's top priorities, but the team's 10 objectives do not include a separate objective for institutional development activities. The omission is intentional. The VBC II team does not consider institutional development an objective in and of itself. In our plan, institutional development is an integral part of a series of complementary objectives and strategies for building sustainable vector-borne disease control programs. To achieve this goal, we will accomplish the following objectives during the next five years:

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Objective 1 To develop planning and management tools that will assist host country governments and A.I.D. Bureaus and Missions in devising sustainable regional and country strategies to address vector-borne diseases.

Objective 2 To improve planning, monitoring and evaluation of control programs by designing integrated health and management information systems (HIS/MIS) that permit appropriate information flow between policy makers, program managers, field staff and community workers.

Objective 3 To design and implement epidemiologic surveillance systems to provide the information communities and program managers need to plan, conduct and evaluate control efforts.

Objective 4 To develop and promote the use of cost-effective, environmentally sound vector control and surveillance methods that will reduce human-vector contact and disease transmission.

Objective 5 To implement human resource development (HRD) programs that improve the viability of developing country efforts to plan, manage and evaluate regional, national and community-based interventions to control disease.

Objective 6 To strengthen the capacity of less developed country (LDC) institutions and communities to conduct and use applied research to solve managerial and operational problems.

Objective 7 To develop and test effective ways of achieving behavioral change to prevent and control vector-borne diseases through personal protection and community-level interventions.

Objective 8 To work with donors and development organizations to integrate vector-borne disease control efforts into other sectors, including agriculture, forestry, water, housing, health service delivery and financing.

Objective 9 To improve LDC program managers' and policy makers' access to information about vector-borne diseases and to support their research and control efforts by strengthening the ability of LDC information centers to collect, use and disseminate information.

Objective 10 To strengthen VBC communications initiatives to inform U.S. and LDC audiences about vector-borne diseases and promote advocacy for innovative approaches to control.

VBC Project Strategies

VBC II will promote a community-based approach to vector-borne disease (VBD) control wherever possible by developing tools and methods to help Missions and host country governments implement a mix of control strategies appropriate for given local settings. Tools to analyze the managerial, logistical and manpower requirements for operating such programs will be developed. The VBC team will continue to respond to Mission requests for technical assistance and training, attempting to use methods that promote a greater emphasis on cost-effective control strategies, program management and cost recovery. Although many activities already have been planned, funds have been reserved to provide additional technical assistance in the following areas:

Institutional Development

The VBC team believes that institutional development (ID) initiatives should focus on sustainability, which we define as the ability to continue identifying and solving problems after external assistance has been withdrawn. Translated into action, this means that ID must enhance the abilities of national and local institutions to marshal their own human and financial resources for vector-borne disease control. Communities should assume a high level of involvement in planning and managing the curative and preventive aspects of disease control. This kind of participation requires a major elaboration and strengthening of the responsibilities of community groups, traditional providers, malaria volunteers and other local organizations. The effectiveness of local institutional development depends on strong links with a more complex, multi-level support system that can handle referrals, provide supervision, conduct research and evaluation, and distribute supplies.

Sociocultural Factors in VBD Control

VBC II will use quantitative and qualitative methods to identify the sociocultural factors that may constrain or facilitate vector-borne disease control programs. The ultimate measure of the success of any disease control program is its adoption by families and communities. Therefore, program planners and managers must work with communities to define problems and identify solutions.

The first step is understanding how families and communities define and manage vector-borne diseases with available resources. Examples of important research questions include: How important do communities consider vector-borne diseases? What symptoms prompt people to seek treatment for themselves or their children? Do they use home remedies, go to a healer, a malaria volunteer or a clinic? What symptoms determine where they will seek help? What are the political, economic and cultural forces that contribute to the creation of favorable vector breeding environments? Do people have the time and interest to eliminate breeding sites? Why don't people act on available information about vector-borne disease prevention or treatment?

Health and Management Information Systems

Relatively inexpensive microcomputers offer the potential for effective information management. However, faster access to incomplete or incorrect data does not improve an information system. Therefore, in developing integrated health and management information systems (HIS/MIS) for vector-borne disease control, VBC II will emphasize the quality and flow of data to promote informed decision making.

We will assist in developing information systems that enable institutions to respond rapidly to changing disease and ecological patterns and to monitor and evaluate the efficacy of specific interventions. These systems will ensure the timely flow of information about disease and ecological trends, finance, and personnel needs between all levels of the health system. They also will enable programs to target resources where they are needed most and to anticipate factors that promote disease transmission rather than merely responding to outbreaks.

Epidemiologic Surveillance

VBC II will help Missions and host-country governments develop systems for collecting, processing and analyzing data that will provide a better understanding of disease transmission, risk of infection, efficacy of treatment and the cost-effectiveness of vector-borne disease control efforts. Combined with an understanding of the cultural context of a population, these data can provide a basis for developing case management guidelines, analyzing the economic consequences of disease and establishing vector-borne disease control priorities.

We believe that giving health providers at all levels a role in epidemiologic surveillance will improve the quality and relevance of data from the field. It also will enable communities to understand and manage their vector-borne disease problems. Beginning at the village level, health workers should receive training in routine collection of data on VBDs. We plan to develop manuals and procedures for surveillance, case management and referral. These materials will be appropriately designed for the educational levels of health workers in specific regional settings where baseline sociocultural data indicate that community-supported surveillance can be maintained.

Planning and Management Tools

VBC II will develop a series of tools to improve program planning and management. Vector-borne disease control is highly complex and much of the information required to address national and regional problems in disease control is not available in a useful format. We will address this problem by helping host country planners and A.I.D. Bureaus and Missions analyze important issues in disease control, such as urbanization, environmental change, the economic impact of disease and the role of health education and community participation.

We also will support improved program management by 1) preparing guidelines for conducting institutional assessments and designing institutional development activities; 2) consolidating information on integrated vector control into a set of institutional guidelines for preserving environmental quality; and 3) conducting national assessments and developing action plans.

Design of Behavioral Interventions

Elaboration of educational messages and selection of communications channels must reflect the local context and must be monitored for effectiveness. VBC II will use applied research techniques to develop, pretest and evaluate different educational interventions to strengthen the roles of personal protection and source reduction in community-based vector-borne disease control.

The role of behavioral change in vector-borne disease control must be defined in terms of both human behavior and vector behavior and resistance. Therefore, we will develop culturally sensitive educational interventions in tandem with cost-effective vector control and surveillance. For example, educational programs to increase the use of bed nets will have little impact on morbidity if human-vector contact occurs primarily outside of the home or during waking hours. Use of bed nets also is conditioned by availability, cost and cultural factors such as local theories of disease susceptibility, the severity and frequency of malaria compared to other diseases, and which insects are believed to transmit disease.

Vector Control

The VBC team will use data from studies of human behavior and vector ecology to develop strategies for limiting contact between humans and vectors of disease. Our emphasis will be on reducing the need for insecticides and increasing the use of alternatives to chemical control, particularly those that are sustainable at the community level. We will encourage integrated vector control strategies that incorporate a mix of control methods, including source reduction, personal protection and biological control. When chemical control is required, VBC II will work with governments and Missions to ensure that insecticides are used safely, effectively and with minimal effect on the environment.

The Project also will help development planners incorporate disease prevention and control measures into projects in other sectors, including agriculture, forestry, housing, nutrition and disaster relief, that are likely to be hampered by vector-borne diseases or to exacerbate the risk of disease transmission.

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Applied Research

The application of research methodologies to identify problems and evaluate solutions associated with vector-borne disease control programs is reflected in many of the activities in the VBC II Work Plan for FY 90. Such applied research can lead to improved methods of control, health services and drug distribution, and surveillance and information flow.

VBC II applied research activities will identify the strengths and weaknesses of vector and disease surveillance systems, the educational components of programs, and case management and referral strategies. We also will assess the effectiveness of personal protection, source reduction and pesticide control. Studies at multiple sites will test methods for measuring the economic impact of vector-borne diseases and the financial costs of control programs.

In many countries, there are few people with the basic skills to conduct problem-solving research. We will address this problem by developing and assessing procedures for training cadres of trainers in simplified operations research strategies.

Human Resource Development

Before designing HRD activities, the VBC team will identify the manpower capabilities required to plan, manage and evaluate control programs. In the past, little attention has been given to defining the administrative and supervisory structures required to support a given mix of control strategies at the local or district level. For example, low productivity among village malaria volunteers is often attributed to volunteers' skill levels, but it may be more strongly associated with inadequate or inappropriate supervision.

During the next five years, we will develop training programs and materials needed to support and sustain community-based approaches to disease control. Assessments will be used to identify the training needs at all institutional levels, from policy makers to village educators. Training of trainers will increase the ability of national programs to meet continuing manpower requirements.

Information and Communications

VBC provides A.I.D./Washington, Bureau and Mission staff, host country personnel, VBC consultants and others working in development with state-of-the-art information about vector-borne diseases and their control. In addition to responding to information requests, we will inform these groups and other decision makers about successes and lessons learned in vector-borne disease control and build advocacy for new strategies. We plan to develop outreach materials, including a VBC II video and bulletins about developments in vector-borne disease control interventions, to help fulfill our proactive mandate.

The VBC team will strengthen the information capabilities of less developed country (LDC) institutions by developing regional centers for information about vector-borne diseases. Through these regional centers, our information center will serve as a secondary source of information about vector-borne diseases to a network of LDC institutions. We also will help design and conduct training workshops for information specialists in LDCs.

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Epidemiology

16. **Methods for implementing guidelines for referral and treatment of severe malaria. (Global)**

In collaboration with other agencies, VBC II will explore appropriate presentation of guidelines for referral and treatment of severe malaria and methods to encourage their application at all levels of service delivery.

17. **LAC trend analysis. (LAC)**

Further elaboration of the VBC database that defines and continuously updates the epidemiologic profiles of vector-borne diseases and the status of control program services and resources in the LAC region will continue during year one.

18. **Clinical record study. (AFR)**

In response to a request from the Africa region, VBC II will conduct a retrospective study of clinic admissions for malaria treatment, with particular attention to case definition problems. For further clarification, these data will be combined with those obtained in a separate study of non-formal health sector perceptions and definitions of illness.

19. **Situational analysis of vector-borne diseases in selected African sites. (AFR*)**

In response to the urgent need to clarify the magnitude of vector-borne disease problems in sub-Saharan populations, VBC II will begin the systematic collection of data that epidemiologically describe prevalent diseases in selected sites. The model for a computerized system of continuously updated information on morbidity and mortality and other indicators of control program effects has already been established in the LAC region (#17) and will be modified to accommodate data collection deficits specific to Africa.

20. **Analysis of mortality and treatment costs associated with dengue outbreaks. (ANE)**

In response to a request to further define the aggregate costs of dengue infection in children and to encourage implementation of control measures appropriate to the region, VBC will conduct an analysis of existing data in one ANE country.

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21. **Methods for identification and referral of drug-resistant cases of malaria. (ANE)**

VBC II will develop and implement methods that will enable village-level health workers in one ANE country to maintain a system of surveillance of treatment failures and prompt referral to secondary/tertiary levels of care when identified by procedures appropriate to local infrastructure.

Vector Biology

22. **Dengue decision guidelines. (Global)**

VBC II will prepare and distribute guidelines for health managers to react to threats of dengue outbreaks. The guidelines will include recommendations on the data necessary to predict outbreaks.

23. **Paper on insecticide repellency and avoidance behavior. (Global)**

This paper will review what is known about this critical phenomenon that limits the effectiveness of residual insecticides and results in waste of costly resources. It will conclude with guidelines for maximizing spraying program effectiveness.

24. **Malacology sourcebook. (Global)**

This sourcebook will be a practical guide for LDC vector control operations to control schistosomiasis and other snail-associated diseases. Its emphasis will be on conservation of resources through the rational application of focal interventions in selected areas of intense transmission.

25. **Paper on selection of sites for the use of focal interventions for schistosomiasis control.**

A companion piece to the malacology sourcebook, this paper will present criteria for site selection for effective focal snail control to prevent schistosomiasis.

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26. **Feasibility of incorporating Chagas' and leishmaniasis control components into existing health services. (LAC)**

VBC II will work with the national health sector to assess the feasibility of incorporating vector control strategies to reduce Chagas' disease and leishmaniasis transmission and to develop an action plan.

27. **Feasibility of a leishmaniasis control component in an existing primary health care program. (ANE)**

The feasibility of including epidemiological and entomological services to control leishmaniasis in a primary health care program will be examined. Where incorporation of these components is feasible, VBC II will develop an action plan.

28. **Workshop on cost-effective vector control and surveillance methods. (ANE*)**

This workshop will define the elements of vector control that could be employed by community members at the village level. Its emphasis will be on environmentally safe technologies that will reduce dependency on spraying, such as source reduction, housing improvement and personal protection.

Human Resources

29. **Development of VBC II five-year training agenda. (Global)**

VBC II will compile and review existing training materials for vector-borne disease control. In collaboration with our subcontractors, we will hold an in-house workshop to develop priorities for our five-year training agenda, including materials development, target audiences, training methodologies and budget requirements.

30. **Local institutional development guidelines. (Global)**

These guidelines will be used to identify the kinds and combinations of community institutions that can be effective in vector-borne disease control, the level of support from outside the community required to sustain effective local control efforts, and appropriate activities for specific local institutions. Local institutions that could be analyzed include membership organizations, cooperatives, service organizations, and traditional healers and other private providers.

31. **Training program guidelines. (Global)**

VBC II will develop guidelines for conducting training needs assessments, designing HRD activities and evaluating their effectiveness. This strategy will serve as the basis for developing training modules over time.

32. **Case studies on community participation in vector-borne disease control. (LAC*)**

An anthropological analysis of several villages where community participation is an integral component of vector-borne disease control will focus on levels of participation, manpower, supervisory systems, educational materials, costs and potential long-term sustainability.

33. **HRD feasibility studies with African training institutes. (AFR)**

To enhance the long- and short-term training opportunities within Africa, VBC II will identify a partner organization interested in strengthening its vector-borne disease curriculum. During the first year of VBC II, we will analyze current training resources. During subsequent years, curricula and materials will be developed.

34. **District-level workshop on epidemiology. (ANE*)**

The primary focus of this workshop for district health officers will be the role of epidemiologic surveillance of vector-borne diseases in primary health care programs.

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Behavioral Interventions

35. **Background paper on health education and community participation. (Global)**

The paper will provide a critical review of the lessons learned in using behavioral interventions to control vector-borne diseases. It will outline procedures for designing and evaluating health education programs and increasing the potential sustainability of community participation.

36,37,38. **Developing a methodology and implementing field studies on malaria case definition and management by families and communities. (Global, LAC*, AFR)**

Using qualitative and quantitative methods, VBC II will assess how families and communities define and treat vector-borne diseases. This information is essential for planning and monitoring educational programs, developing community-based epidemiologic surveillance systems and improving coordination and communication between the formal and nonformal health sectors.

39. **Ethnographic research on vector-borne diseases. (AFR)**

Sociocultural data related to vector-borne diseases are essential to developing behavioral interventions to control the diseases, but these data have rarely been collected. VBC II will collect ethnographic data from several African sites. During the first year of VBC II, we will develop the protocol for this research.

Applied Research

40. **Identify case studies for man-made environmental changes that exacerbate VBDs. (Global)**

During FY 90, VBC II will identify A.I.D.-assisted projects associated with ecological changes and design strategies to control enhanced vector-borne disease transmission during subsequent years of the contract.

41. **Training strategy for implementation of operations research to solve managerial problems. (LAC*)**

VBC II will develop materials and procedures for their use that will enable health care managers at all levels of the system to identify and resolve problems through the application of operational research methods.

42. **Analyses of the economic impact of vector-borne diseases and the cost-effectiveness of existing interventions. (AFR*)**

In collaboration with subcontractor faculty members and in consultation with development agency health economists, VBC II will research the most viable methods for obtaining data and assessing the costs of morbidity and mortality and the loss of productivity associated with vector-borne diseases, as well as the individual and community expenditures on treatment and other forms of intervention. Analyses of these parameters will subsequently be undertaken in those sites where data exist or can be obtained by rapid survey.

Intersectoral Collaboration

43. **Guinea worm information network. (Global)**

VBC II will continue working with A.I.D.'s WASH Project to provide information about Guinea worm disease to more than 500 participants in 30 countries.

44. **Urban/peri-urban information network. (Global)**

VBC II will contribute information about the effects of urbanization on vector-borne diseases to an information network on urban and peri-urban issues in development. We will work with the WASH Project and EPA to disseminate this information to people and organizations working on health and development projects in urban and peri-urban areas.

45. **Preconference workshop at the American Society of Tropical Medicine and Hygiene (ASTMH) annual meeting. (Global)**

VBC II and Tulane University will organize a workshop on the integrated approach to vector-borne disease control for scientists attending the annual meeting of ASTMH.

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46. **Needs assessment for intersectoral national action plan for the control of VBDs. (LAC*)**

A needs assessment for a national plan of action will examine the feasibility of an intersectoral approach for VBD control. VBC II will analyze the potential roles of the housing, forestry and agriculture sectors.

47. **Assessment of possible linkages with the Onchocerciasis Control Project (OCP) and the Famine Early Warning System (FEWS) Project (AFR).**

VBC II will assess possible roles it might play in OCP's devolution process. Possible collaboration with the USAID FEWS Project also will be explored.

48. **Workshop on environmental engineering for VBD control. (ANE*)**

This workshop will examine the role of environmental engineering methods as an alternative to chemical methods of vector control.

Communications and Information

49. **Curriculum development for information specialists. (Global)**

Beginning in year two of VBC II, information specialists from each of the three regions will receive training in vector-borne disease information collection, maintenance and dissemination. The curriculum for this training program will be developed during FY 90.

50. **Video on VBC II (Global).**

The video will focus on VBC II's five-year agenda, highlighting the major challenges for vector-borne disease control in the 1990s.

51. **Outreach materials. (Global)**

The Project will develop outreach materials to promote advocacy for the VBC II approach to disease control. Examples of these materials include a new brochure, briefing materials for Missions and policy makers, and updates on methodological and technical advances.

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52. Institutional capability assessment to determine capacity for regional information distribution. (AFR)

During the next five years, the VBC II Project will work with regional information centers to enhance their abilities to disseminate materials on vector-borne diseases. In 1990, the Project will initiate this institutional strengthening activity with one African center in response to regional interest.

Appendix I

VBC FY 1990 Activity Descriptions

VECTOR BIOLOGY & CONTROL

Vector Biology & Control Project
1611 North Kent Street Suite 503
Arlington, Virginia 22209
(703) 527-6500

Telex 248812 (MSCI UR)
Cable MSCI Washington, D.C.

VBC TRAINING PROGRAM

DEVELOPMENT WORKSHOP

JULY 18–19, 1990

VECTOR–BORNE DISEASE

CONTROL

CHANGING STRATEGIES

VBC FY 90
ACTIVITIES DESCRIPTIONS

Abstracted from
VBC 1990 Project Work Plan

Pg. 21/32

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4. VBC FY 90 Activities

The large portfolio of activities for FY 90 includes all of the initiatives the VBC staff considers important to project start-up. The subcontractors played an active role in developing the portfolio and will manage or participate in a number of activities.

Many of the initiatives in this work plan are multi-year activities that will begin during the first year of the project. Several preliminary planning and liaison activities that will be be initiated during FY 90 will grow in scope in subsequent years. Considerable emphasis is placed on developing guidelines and methodologies to ensure that in future years, Project staff and consultants, host country personnel and A.I.D. Bureaus and Missions share the same objectives and tools. Field activities have been planned in response to Mission cables, but many of these tasks will require buy-ins. It should also be noted that the VBC I Project runs concurrently with VBC II through August and is executing activities in areas complementary to those outlined below.

A table showing the level of effort VBC II will give to each technical area and region is followed by a brief description of planned activities. Regional activities requiring buy-ins are marked with an asterisk.

REGION	PLANNING AND MGMT. TOOLS	HIS/MIS	EPIDEMI-OLOGY	VECTOR BIOLOGY	HUMAN RESOURCES	BEHAVIORAL INTERVEN-TIONS	APPLIED RESEARCH	INTER-SECTORAL COLLABORA-TION	COMMUNI CATION AND INFOR-MATION
GLOBAL	1.Guidelines for conducting institutional assessments. 2.Background paper on urbanization and VBDs.	10. Initial design of Guinea Worm Geographic Information System (GIS).	16 Methods for implementing guidelines for referral and treatment of severe malaria	22.Dengue decision guidelines 23 Paper on insecticide repellency and avoidance behavior 24 Malacology sourcebook 25 Paper on site selection for focal snail control	29 Development of 5-year training agenda. 30 Local institutional development guidelines 31 Training program guidelines	35 Health education and community participation paper 36 Development of a methodology for field studies of malaria case definition, management by families and communities	40.Identify case studies of man-made environmental changes that exacerbate VBDs.	43 Guinea worm information network. 44.Urban/peri-urban information network. 45 Pre-conference/ workshop/ ASTMH.	49 Curriculum development for information specialists. 50.VBC II Video. 51.Outreach materials.
LAC	3.Institutional assessment to improve financial sustainability and technical impact 4 VBD control program evaluation.	11 ,12,13. Continued development of HIS/MIS in 3 countries	17.LAC trend analysis	26 Feasibility of Chagas' and leishmaniasis control	32 Case studies on community participation in VBD control	37 Implementation of field study on malaria case definition and management by families and communities	41.Training strategy for implementation of operations research to solve managerial problems.	46 Needs assessment for intersectoral national action plan.	
AFR	5.VBD control program evaluation. 6.Assessment of requirements for national ivermectin distribution system 7 Feasibility of VBC participation in national action plan	14-15 HIS/MIS needs assessments in 2 countries	18 Clinical record study 19 AFR VBD situational analysis		33.HRD feasibility studies with African training institutes	38 Implementation of field study on malaria case definition and management by families and communities 39 Ethnographic research on VBDs	42.Analyses of economic impact of VBDs and cost-effectiveness of interventions	47 Assessment of OCP, FEWS linkages	52.Institutional capability assessment for regional information distribution
ANE	8 VBD control program evaluation 9 Needs assessment for developing national action plan		20 Analysis of dengue treatment cost and child mortality 21 Methods for identification and referral of drug resistant malaria cases	27 Feasibility of developing a leishmaniasis control component in an existing PHC program 28 Workshop on cost-effective vector control and surveillance	34 District level workshop on epidemiology			48 Workshop on environmental engineering for VBD control	

Planning and Management Tools

1. **Guidelines for conducting institutional assessments. (Global)**

   These guidelines will serve as a diagnostic tool for identifying institutional strengths and weaknesses. The results of such analyses will serve as a basis for developing ID programs that enable institutions to set goals relevant to local needs, achieve those goals and become self-sustaining.

2. **Background paper on urbanization and vector-borne disease control. (Global)**

   In response to Bureau interests, VBC II will develop a strategy paper on urbanization and vector-borne diseases.

3. **Institutional assessment to improve financial sustainability and technical impact. (LAC*)**

   Technical, operational and managerial components of existing systems will be assessed to identify logical targets for change toward more effective and efficient programs of control.

4,5,8. **VBD control program evaluation. (LAC*, AFR*, ANE*)**

   VBC II will review an existing program in each of the three regions during year one to assess its impact on indicators of morbidity and mortality, case management and drug distribution, data management, surveillance of cases and responses to treatment, surveillance of vector behavior, program management, and levels of community support and participation.

6. **Assessment of requirements for a national ivermectin distribution system. (AFR)**

   Prior to the implementation of ivermectin treatment programs in areas of high onchocerciasis endemicity, VBC II will assess parameters necessary for an efficient distribution system.

   * Will require a buy-in.

7. **Feasibility of VBC participation in the development of a national vector-borne disease control plan of action. (AFR)**

The advantages of multilateral, inter-institutional collaboration will be explored in the African region as a first step toward the multidisciplinary development of a national control program.

9. **Needs assessment for the development of a national action plan for VBD control. (ANE)**

VBC will conduct an assessment of the extent of available epidemiologic information about the prevalence of vector-borne diseases, the human and financial resources available to combat them and the sociocultural factors that contribute to success or failure of control programs in order to make recommendations for program development.

HIS/MIS

10. **Initial design of a Guinea worm geographic information system (GIS). (Global)**

In collaboration with the Peace Corps and UNICEF, VBC will begin developing a computerized system to map the worldwide prevalence of Guinea worm disease. This system will be used to monitor the global effort to control the disease. During 1990, necessary software and hardware will be obtained and the GIS database will be developed.

11*,12,13. **Continued development of HIS/MIS. (LAC)**

During VBC I, the Project began developing information systems for epidemiological, entomological and management data in several countries. System development will continue during VBC II.

14, 15. **HIS/MIS needs assessment. (AFR)**

The data management needs of two African control programs will be assessed and plans for HIS/MIS will be developed for future implementation.

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Appendix J

Bibliographic Database Information for Proposed VBC Project Training Materials Database

Pro-Cite®

For IBM personal computers and compatibles

"Pro-Cite has clearly organized menus that allow the package to be used intuitively, and there is rarely, if ever, any need to resort to the manual."

Information Today
October, 1988

Product Overview

Pro-Cite is a database system designed specifically for organizing bibliographic references and formatting bibliographies. Each database can hold up to 32,000 references from books, journals, dissertations, or any other source. Workforms, or record types, are pre-defined for 20 different media sources and users can define their own for specialized information management. References can be searched, sorted, indexed, and formatted into bibliographies based on any bibliographic style.

Key Features:

20 pre-defined and 6 user defined workforms

Bibliographic information from any source can be easily stored in Pro-Cite. The appropriate fields are defined for references from books, journal articles, maps, and other sources. Users can also create six workforms with up to 45 fields each.

Variable-length fields

Each Pro-Cite workform has up to 45 variable-length fields to store as much, or as little, information as needed.

Sorting on up to six levels

Records can be sorted on up to six levels and the sort can be changed at any time. Records can also be sorted on any field, in ascending or descending order, for customized bibliographic output.

Sophisticated searching

Construct complicated or simple search expressions using full Boolean logic (AND, NOT, OR).

Duplicate detection

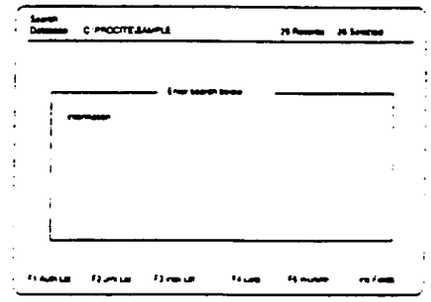
Duplicate records transferred from online systems are detected automatically.

Indexing on any field

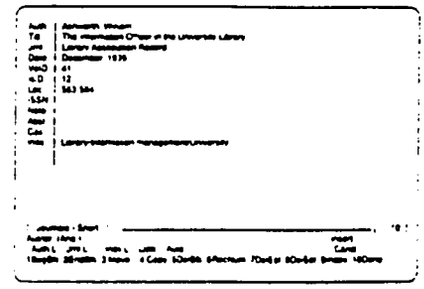
You can create subject bibliography, or assemble a list of all of the journal titles, etc. by indexing on any field.

Authority Lists simplify data entry

Author names, journal titles, and index terms can be typed once and stored in an Authority List. Then access that list and enter the word(s) automatically into any field or search expression.



Searching your database can be as easy as entering a keyword. You can also incorporate Boolean operators to form complex queries.



Entering data is easy using Pro-Cite's pre-defined workforms. You can also define your own workforms for greater flexibility.

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Key Features (cont'd.)

Format bibliographies in any style
Format bibliographies automatically using any one of 26 standard formats. You also have the option of modifying existing formats or creating your own.

Import and Export
Records can be imported from and exported to other database management programs.

Compatible with Pro-Cite for the Macintosh
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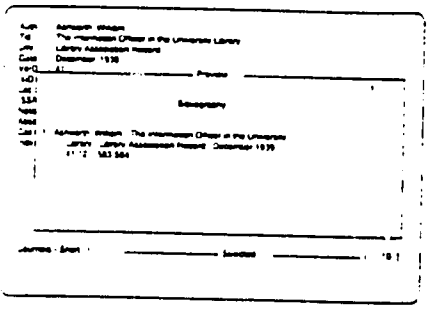

Pro-Cite formats accurate citations automatically.

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System Requirements:

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256K RAM minimum with PC or MS DOS 2.1 or higher; 320K with DOS 3.0 or higher.

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Integrates With:

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Pro-Search for the IBM personal computers and compatibles.

Pro-Cite for the Macintosh.

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First Released: August, 1984

Current Version: 1.4, Released August 1988.

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